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# THE AGRICULTURAL EDUCATION MAGAZINE



Townshend Agricultural Education Society,  
Ohio State University, Columbus. (See page 215)

"NEITHER depression nor economy must be permitted to interfere with the right of every boy and girl to enjoy the educational opportunities that should be the birthright of every young American."—Louis J. Taber.

# The Agricultural Education Magazine

A monthly magazine for teachers of agriculture. Managed by an editorial board chosen by the Agricultural Section of the American Vocational Association and published at cost by the Meredith Publishing Company at Des Moines, Iowa.

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## CONTENTS

Teachers of Agriculture: Agriculturists or Educators?.....	203
Our New Booklet.....	203
Fundamental Problems in Vocational Agriculture.....L. M. Sasman.....	204
Irrigation Demonstration Day.....J. A. Kovanda.....	205
Home Economics Instruction for Boys (Minnesota Visitor).....	206
A Time Saver in Teaching Grain Judging.....Norris Enders.....	207
A Requirement for Effective Project Supervision.....H. H. Gibson.....	208
Training Teachers for Evening School Work.....H. M. Hamlin.....	210
Evening-School Council.....R. E. Rulifson.....	210
Creating Interest in Part-Time Instruction.....H. F. Fox.....	211
Evening Course in Farm Law.....Paul Auringer.....	211
Why an Evening School?.....Marvin O. Castle.....	212
Evening Class in Agricultural Leadership.....Ira L. Plank.....	212
Results of Part-Time Work.....S. M. Jackson.....	213
Farmingdale Students Win at Egg Show.....D. H. Horton.....	213
A Comparison of Methods in Vocational Agriculture With Varying Instructional Groups.....Sam Hitchcock and Carl G. Howard.....	214
Our Cover—Townshend Agricultural Education Society.....	216
6,000-Mile Western Tour.....Ivan Jett.....	216
A Future Farmer Alumni Chapter.....Winston C. Strong.....	217
Vocational Agriculture Directory.....	219

# Editorial Comment

## Teachers of Agriculture: Agriculturists or Educators?

PERSONS engaged in agricultural education usually regard themselves primarily as agriculturists. Most of the time they spent in preparing for their work they spent in farming and in learning agricultural subject matter. Learning to teach has seemed to be an easy matter compared with attaining competence in farming.

I should like to suggest that this attitude has been the cause of many of our most serious difficulties in agricultural education and that a Copernican revolution in our thinking is called for.

Our job as *educators* is to bring about desirable and permanent changes in people which are voluntarily accepted and voluntarily sustained by those whom we teach. If we judge teachers by such a standard, we find there are the widest variations in their competency. Some are achieving results so far-reaching and consequential that they are practically priceless to society. Others, tho they go thru all of the motions apparently called for, attain no positive results or negative results. Some day we may be able to distinguish the real from the sham in agricultural education and then we shall rate the teacher of agriculture upon his attainments as an *educator*.

When that time comes, there will be no lack of demand for the few highly capable *educators* discovered among a host of "teachers of agriculture." For every community has Herculean tasks which call for them and the public is ready to reward those who can perform them. The reason that communities have not more often turned to agriculture teachers for the solution of problems which are matters of life or death to them is that they have not found teachers, as a class, capable of securing real educational results.

These comments do not imply that the teacher of agriculture should not be thoroly trained as a farmer. Most of them need far better training in farming than they have secured. Mr. Rufus W. Stimson was right when he said that it is easier to make a teacher out of a farmer than to make a farmer out of a teacher. But we tend to underestimate the work which remains in making a real educator out of a farmer.

What are some of the implications for the preparation of teachers of agriculture?

1. Teacher-training departments should be separated from the colleges of agriculture and affiliated with colleges of education. (Close co-operation with the college of agriculture should, of course, continue.) Agricultural students intending to teach should be asked definitely to classify themselves as prospective educators when they decide to prepare for the teaching of agriculture.

2. Much greater care than at present will have to be taken in selecting persons with agricultural backgrounds to prepare for teaching. It must be recognized that a large part of the persons who take agricultural-college courses have little or no aptitude for or interest in educational work. We may find that many of our best prospective students have gone to the teachers' colleges from which they will have to be transferred in order that they may secure the agricultural training they need.

3. Teacher-trainers should claim much more time than they are now getting for the special preparation of students as educators. Probably this can be secured only by lengthening to five years the total college preparation for teaching, tho it may not be necessary to delay employment until the entire five years have been taken.

4. In the preparation of teachers to be teachers, as in the preparation of teachers as farmers, practical experience under real conditions is central. This means that practice will begin early in the special training of the teacher of agriculture and that his course work will follow along with it and supplement it. This practice may or may not receive college credit. In most institutions it will have to be done without credit or with limited credit. No institution with which I am familiar would be willing to allot credit for practice in teaching proportionate to the time which ought to be spent in such practice.

5. Since teachers of agriculture are concerned with bringing

about changes in people, they will have to study people as thoroly as they have studied farming. Nothing human can be alien to them. Functioning courses in psychology, sociology, history, philosophy, and all of the other "liberal" fields, conspicuously lacking in the preparation of most agriculturists, will have an important place in the training of the agriculture educator.

6. We shall have to learn to apply to our novitiates in teaching the real and drastic standards which should be applied to teachers. Those incapable of producing real educational results will have to be weeded out during and following the practice or probationary period. Perhaps we shall decide to give no regular teaching certificate until after two or three years of regular teaching.

7. Obviously we cannot apply real standards to those preparing for teaching until such standards are better worked out than at present. Much more of the energy of our profession should go into attempts at developing usable methods of evaluating our work comprehensively and realistically.

8. We need real standards for teacher training as well as for teaching. Someone has recently commented that teacher-training has become a racket. (This comment was not applied specifically to agricultural teacher-training.) Certainly in many institutions it involves only the offering of a succession of largely non-functioning "courses." At a time when we need much more time for teacher-training, we are wasting much of the time we have and hence are causing administrators and students to question whether we do not already have too much time. Teacher-training as well as other forms of teaching must aim at permanent, voluntary, and significant changes in behavior and practice.

All of this cannot come about pronto. We shall have to be content to work in the general direction I have indicated. I am inclined to think, however, that it will have to come. We have tried in agricultural colleges, in agricultural extension, and in vocational agriculture to get educational results with agriculturists. Sometimes we do. But we are not always going to be content to gamble. Sometime we shall have to assure the people who employ workers in agricultural education that each and every one labeled an agriculture educator can actually educate.—H. M. Hamlin, Iowa.

### WHITHER AGRICULTURAL EDUCATION?

Teachers of agriculture will be interested in our new booklet containing 63 pages. The articles contained in it were published in the magazine. They have been brought together in the booklet form for your convenience. The authors, our own fellow-workers, have made a distinct contribution to our field of education. The articles cover the following topics:

**Relating Instruction to Life Needs**  
**Building Attitudes**  
**Building Agricultural Citizenship**  
**Course of Study**  
**Supervised Farm Practice**  
**Extra-Curriculum Activities**  
**Balanced Education**  
**Co-operating With Farmers' Organizations**  
**Measuring and Evaluating Pupil Growth**  
**Teacher Education**  
**The Art of Living**

The number of copies of this booklet has been limited to 3,000. Teachers of agriculture are urged to write at once to their state supervisor or teacher-trainer for copies. We are able to distribute them to the states in lots of 20 or more at a cheaper price than when single copies are ordered. In case teachers of agriculture cannot secure their copies from their state supervisor or teacher-trainer, they may be procured from either the Editor or Business Manager at 15 cents per copy postpaid. If any state association of teachers of agriculture desires to purchase in lots of 20 or more, a reduced price will be quoted upon request. **Order Today.**



A. K. GETMAN

## Professional

R. W. GREGORY

## Fundamental Problems in Vocational Agriculture

LOUIS M. SASMAN, State Supervisor,  
Madison, Wisconsin

(Paper presented before Agricultural Section, Wisconsin Education Association.)

THERE are many ways in which one can approach a discussion of Problems in Vocational Agriculture. There are many problems. We could confine our discussion to such matters as the hour or the 90-minute period, the organization of field trips, or the conduct of F. F. A. chapter meetings, or we can, as I have chosen, discuss some of the fundamental problems upon the solution of which rests the final development of an adequate program of training for farming.

*Qualified Teachers*

One of the first problems in any teaching field is the securing of well qualified teachers. In this respect, vocational agriculture does not differ from the other fields. Ever since the beginning of vocational education in Wisconsin, we have had for instructors in agriculture, college of agriculture and teacher college graduates and for the most part those instructors have been young men who have been reared upon the farms of the state. During the past few years we have had, especially in some states, a tendency for these agriculture teachers to take advanced degrees in keeping with the development of teacher-training practice in other lines. The advanced degrees are, for the most part, based upon more training in the philosophy and methods of teaching. The great majority of agriculture teachers today in Wisconsin or any of the other states have never farmed. They have lived on farms, it is true, but they have gone first to the country school, then to high school, and finally to college, sometimes with some rural school teaching or other experience for a year or two, but usually with an unbroken record of school attendance from the age of four or five until they finished college. In most instances, they have spent their summers on the farm but often while in college they have not even done that. Those young men go out of college with considerable enthusiasm, in many cases, for the work of agricultural teaching, and the development of vocational agriculture thruout the nation indicates that they have done a rather satisfactory job. But if we are to develop a program of vocational training for farming that starts with boys in high school and continues with them until they are ready to retire from farming, there is a question whether we need to stress more school or more practical experience in farming. Our present system is probably adequate for the high school program, where it is perhaps desirable to have the academic qualifications of the agriculture teacher similar to those of the other high school

teachers; but for part-time and evening schools for mature farmers and farm boys out of school, it would seem probable that we should need to devise some program of training that will enable us to secure teachers with a background of experience in farming greater than most of our teachers now have. Of course, if we are to secure teachers who are really successful in farming there will undoubtedly have to be some adjustment in salaries, for the more capable farmers are getting considerably more pay than the average agriculture teacher. I suggest that within the next three years we set up a requirement that every beginning agriculture teacher must have, after finishing college, at least one year of satisfactory farm experience including managerial experience. I suggest that this may be worked out thru co-operation with from 25 to 50 capable farmers over the state and possibly also co-operation with corporations owning farms in the state. I recognize also that beginning salaries of men with this training will have to be more favorable than beginning salaries are at the present time, but I believe these are not insurmountable difficulties in the development of this program.

*Course Content*

Another basic problem in vocational agriculture is the problem of the proper organization of teaching material. We have had in this state for over 25 years a four-year high school course in agriculture. For the past 13 years a course consisting of one year each of plant husbandry, animal husbandry, farm mechanics, and farm economics has been followed. We have not adhered strictly to those courses but there has been no major deviation from them. Other states have adopted various systems of organization of subject matter, some quite similar to ours, others decidedly different. The tendency is, when things are going well, not to disturb them nor to worry too much about improvements which might be made. But there is a question in my mind whether our present organization of subject matter is the one best adapted for a program of farmer-training. One of our departments has for the past three years been working on a program of organization of teaching units with various units being given in different years. There is some danger of such a system becoming even more artificial than the system of yearly courses. But, as a rule, if we can properly train our teachers and provide conditions which will maintain continuity of service in one community on the part of the agriculture teacher, it would seem that a unit organization of teaching material would be preferable to our present yearly course system. We

do, for instance, commonly teach milk testing in our freshman year altho the freshman course is supposed to be plant husbandry. It would seem quite natural that we should, with that milk testing, teach at least some thumb rules in regard to dairy feeding. It would also seem probable that freshman boys are able to learn how to cull poultry and learn what feeds make up a good poultry ration. A freshman boy can also learn to splice a rope, clean and repair a harness, or solder a milk pail. In other words, we have no basis for our present organization of teaching material except that it has been organized the way it is for over a decade and the results have appeared to be rather satisfactory.

Mr. C. B. Campbell at River Falls, who is working on the unit system, believes that there are many advantages as well as some disadvantages to that system.

Of course, when it comes to part-time and evening schools, we decidedly change our whole system of teaching and organize on a unit basis, giving attention first to those phases of the farming program which seem to be in greatest need of attention. It would seem that if a real vocational program is to be developed in the high school departments, something of the same system should be used. So I propose that a committee of experienced agriculture instructors, including those in charge of the practice teaching departments, be selected to give this matter careful study with a view to making definite recommendations.

*Supervised Farm Practice*

Another problem with which we are vitally concerned in vocational agriculture is that of the development of programs of supervised practice in farming, in order that vocational agriculture may possess that combination of study and practice which is necessary to make it really vocational. We have, I believe, in the past two years, greatly improved our program of supervised practice by setting up a program which attempts to embrace all phases of farm practice. It is one thing, however, to set up a program and another thing to have it properly developed. There is no question but that in many departments, at the present time, we have a very high correlation of study and practice and the boys are getting practice in practically all types of farming activities in which they are apt to engage. In some departments, however, some of the boys are still simply carrying projects many of which do not amount to very much; the instruction is being given in an academic manner with no connection between the study and practice; and, in a number of cases, boys are in the department who really are getting no practice in farming at all. They may be learning a lot about agriculture but they are not learning how to farm. The adoption of a unit system of organization of teaching material would tend to develop a greater correlation between study and practice. Especially in connection with our part-



time schools much more attention must be given to an adequate program of practice in connection with the study. With young men who are out of school and on farms, the need and the opportunity is apparent for the development of strong programs of practice which will enable these young men to build up an investment in farming. At the same time, these young men are quick to develop practices which build up the income of their home farms. I think we cannot too greatly emphasize the fact that vocational training must consist of a combination of study and practice, that the practice is fully as important as the study, and that lack of attention to an adequate practice program causes the teaching to be academic rather than vocational. Consequently, one of our basic problems in vocational agriculture is the continued development of a broad program of supervised practice which will include productive enterprise projects, developing the boy's ownership ability as well as his investments in farming; improvement projects which improve the income on the farm in general and give the boy training in a variety of practices; approved practices which carry out on the farm practices which have proved to be desirable; and farm skills which offer the opportunity for training in the wide variety of skills which a farmer needs for success.

#### *Out-of-School Groups*

The problem of providing an adequate farmer-training program for out-of-school farm boys is another one of the basic problems of vocational agriculture. We have, in this state, considered this problem of greater importance than have the workers in vocational agriculture in most of the other states, as is shown by the fact that in 1935-36 we had more young men enrolled in part-time classes in agriculture than any two of the other 11 states in the north central region, and this past year we had nearly 400 more young men enrolled than in 1935-36. However, even this year we had an enrollment of only about 2100 in these schools and most of these were enrolled in short-unit courses of from 13 to 20 lessons meeting in the evening for about two hours a week. During the past few years, we have developed in several centers the plan of having an instructor giving his full time to conducting part-time schools for out-of-school farm boys. The young men enrolled in these schools are largely those who have never gone to high school, altho there are some who have gone thru high school and some who have had four years of vocational agriculture in high school. The place in which it seems to me that the program is working the most nearly the way it should is at Fort Atkinson where all of the part-time classes are held in the daytime. The pupils are grouped by localities, each group coming in for one full day a week and dividing its time among problems of crop production, dairy improvement, F. F. A. activities, and recreational activities. Last year about 60 boys were enrolled in these part-time classes at Fort Atkinson and this year it appears probable that there will be over 100 enrolled. At Superior where a similar program was instituted last year but where, because of the local conditions, it is necessary to hold the classes in the evening, 245 young men

were enrolled this past year. In Wood County 74 were enrolled and in Racine County 41. There is under way at the present time a movement on the part of several schools to secure an itinerant instructor who can teach specific phases of a farmer-training program in several different communities each week. In all probability these out-of-school young men will make up a large percentage of the farmers of the next generation. They are on the farm now and they are interested in receiving instruction which will enable them to improve their ability as farmers. A few years ago we were saying this group was hard to reach, just as 10 years ago we were saying that it was hard to interest farmers in evening schools; but today we know that we can develop part-time schools for young men on farms, providing we demonstrate that we can provide training which will be of practical value to them in their preparation for farming.

#### *Professional Improvement*

The development of an adequate program of professional improvement for instructors in agriculture is another basic problem of vocational agriculture. From the standpoint of the instructor in agriculture, the twelve-month job is one of the greatest advantages and at the same time one of the principal problems of vocational agriculture. The summer conference is, of course, designed to provide the necessary professional improvement. It has been followed the last few years by three- and four-weeks summer sessions offered at many of the agricultural colleges. Twenty years ago instructors in agriculture, being graduates of four-year training courses, were generally among the best prepared educationally of any members of the high-faculty. However, the length of training period for the other teachers has gradually lengthened and since it is possible for them to attend six- and nine-weeks summer sessions it is possible for them to get considerably more school after they have begun teaching. In the case of instructors in agriculture, however, regular summer session attendance is impossible without the neglect of the most essential features of the vocational education program. Consequently, I believe that the following program should be adopted: A three-weeks summer session should be attended at least every three years and in many cases every two years by each agriculture teacher. These three-weeks courses should include technical and professional courses and be so arranged that graduate credit can be secured by attending them; extension courses in agricultural education should be arranged for agriculture teachers. These can readily be arranged upon request as they have been for other high-school teachers in various centers over the state; courses in technical agriculture should be arranged at the college of agriculture and centers over the state for the purpose of providing study of the latest scientific developments in the various fields; and reading courses should be worked out, including books by the leading writers in the fields of education and agricultural education. Farm practice centers should also be established similar to those suggested for those preparing to teach, at which instructors might renew their contacts with the problems of farm management.

The probabilities are that the majority of agriculture teachers for the next decade at least will not be greatly interested in graduate courses. There will be, however, a number of men anxious to prepare for the better positions or looking forward to positions of leadership in the field of agricultural education; and the way should be open for their advancement without the neglect of the work in their departments which is the chief cornerstone upon which their advancement must depend.

It would be impossible in such a brief presentation to touch upon all of the fundamental problems of vocational agriculture, but preparation of instructors, a combination of study and practice in a vocational program, and methods of organization to reach the principal group for which such instruction is intended are certainly fundamental problems deserving the careful study of all those interested in the continued development of a program of training farmers and farm boys for farming occupations.

### **Irrigation Demonstration Day**

J. A. KOVANDA,  
Ord, Nebraska

THE development of a "high spot" in a vocational agriculture program is valuable from both an instructional and a publicity standpoint. Care must be taken lest remaining aspects of the work in vocational agriculture be neglected. On the other hand, we teachers can sell our courses most effectively by laying emphasis on a particular phase which, for one reason or another, appears exceptionally opportune for development.

In casting about for some such novel addition to our curriculum at Ord, we did not overlook the coming of irrigation to the North Loup Valley. When approval was made of this two million dollar project, Ord got ready for a mammoth celebration, and we planned an irrigation demonstration for the day.

A plot of land, partly level and partly sloping, was obtained, plowed, and harrowed. A part of it was listed to illustrate row irrigation on varying degrees of slope. The remainder was leveled to show the flooding method of irrigating. The city furnished water and the Burlington Colonization Agent directed the demonstration. In the shop we made a leveler and a ditcher out of bridge planks. Many farmers took patterns of this equipment because they could save \$100 by making it at home. Over 1,000 people witnessed the demonstration.

Our regular and part-time classes in agriculture have visited local farms where pump irrigation is in progress. Books, bulletins, and film strips on irrigation have been added to our library. We have attended local irrigation schools sponsored by our farm bureau and taught by experts.

The dry-land farmers of this valley and the adjoining one along the Middle Loup are about to plunge into a mammoth irrigating venture for which they have not had time to prepare—an endeavor which was tried before and failed. There is more educational work to be done than our local agencies can possibly handle.

A. M. FIELD

# Methods

## Home Economics Instruction for Boys

(Editor's Note: From the Minnesota Visitor, October 1937. In a following issue we will present Household Mechanics for Girls from the same source.)

IN MINNESOTA girls are frequently enrolled in the agriculture classes. In fact, there are some classes taught by the agriculture teacher where the entire enrollment is made up of girls. Naturally, the question arises—"Why not provide some instruction in home economics for the boys?" The idea is not entirely without merit. There are a great many things the home economics teacher can contribute to the total education of boys. There are also a great many things that the girls in the home economics classes can study under the direction of the agriculture teacher. In each of the two situations, it is perhaps not always the best use of the high school student's time to devote an entire year to a study of problems considered especially appropriate for the other sex. The suggestion is therefore made that the home economics teacher and the agriculture teacher exchange classes for a few periods. As a guide to the type of material in which the boys might be interested, Miss Hermine Bierbauer has prepared the following suggestive content for a series of lessons to be given by the home economics teacher to the boys in the agriculture classes in the high school.

### Exchange Classes for Boys in Home Economics

It would seem that the most important thing to consider in connection with exchange classes for boys in home economics is that the boys get something from the course that will prove helpful to them and that they will enjoy. Most men and boys are frequently confronted with certain problems of social behavior which they are not always prepared to solve. It is very important to adjust the course to be taught to meet the needs of a particular community. A questionnaire has been included which may be of some assistance in determining the problems to be included in the course. It may be answered by the boys, or their parents, or both.

The items which are listed in the following outline are merely suggestions, and are not to be regarded as a complete course of study. It is not expected to be followed as such. No exchange class will last long enough to cover each topic thoroly. It is suggested that certain points under each topic may be of particular interest to the entire class, while others may be of interest only to certain individuals in the class. It would seem wise, then, to select only the topics of the most interest or those considered most important. Some courses may include only food and clothing work.

If the home economics classes were to exchange each year with the agriculture classes all the way through high school, it might be possible in four years' time to give a fairly adequate coverage of each

topic, going into each one in more detail than if one were trying to skim the surface in a much shorter period.

Whatever work is covered, the use of demonstrations would help to make the work more interesting and effective. The work should be made as practical, specific and concrete as possible. Actual instances should be used wherever they may fit. If there is any work with house planning, it might be well to visit a house under construction. Perhaps other field trips can also be taken.

### Questionnaire

The things I should like to learn more about are: Check with an X.

1. The selection of an adequate, well-balanced meal in a cafeteria or restaurant.
2. How to prepare a simple, well-balanced meal.
3. The cost of food and the cost of feeding a family for a month.
4. Camping standards—site, food, sanitation, and equipment.
5. The duties of a host.
6. Etiquette and appropriate behavior for various occasions.
7. Suitable dress for various occasions.
8. The names, cost, wearing qualities of standard wool and worsted used in suits and overcoats.
9. Line and color and their combination in dress.
10. How to select ties, shoes, and hats.
11. How to select shaving soap, razors, shampoo, soap, tooth paste, etc.
12. How to clean and press suits.
13. Managing own income or allowance.
14. How to darn socks and mend clothes.
15. How the family income should be apportioned for food, shelter, clothing, etc.
16. Investments and savings in the home.
17. First aid and home care of the sick.
18. The care of children.
19. Factors involved in selecting or building a home—plans and furnishings.
20. Labor saving devices—their selection, operation, care and repair.
21. Management of the home, both work and leisure.
22. How to build and maintain happy and successful home life.
23. Inter-relationship of the home with the community.
24. Add others.

The following are selected as types of suggested problems that might be of interest and value for boys' classes to be taught by the home economics teacher. In certain instances, suggestions on methods of presentation are included.

### Foods

#### Nutrition

Relation of food to one's personal health and efficiency.

Factors influencing food requirements: age, sex, climate, activity, occupation. What constitutes a well-balanced diet?

What is an optimum diet? What is

the role of protein, carbohydrate, fat, minerals and vitamins in the diet—the particular functions and requirements with regard to each?

Comparison of needs of various members of the family. Why do they differ? What are the needs of a growing boy? Study of special diets: athletes under and overweight.

Selections of meals: at home, restaurant, cafeteria, hotel.

Plan menus for home meals. Perhaps menu cards may be obtained from commercial places which the students may use in making selection. Criticize menus. Example: What is wrong with the following meal: Bean soup, baked pike, mashed potato, turnips, pear salad and ice cream? Or, tomato juice cocktail, baked ham, sweet potatoes, buttered beets, cranberry salad and pumpkin pie? Consider whether the meal is balanced—flavor, appearance, texture, etc.

### Food Preparation

#### Camp cookery:

Consideration of suitable foods and equipment. Ask the students for specific instances with which to work—perhaps trips they themselves are planning to make. Preparation of foods suitable for camping: beverages, quick breads, one-dish meals (i. e., spaghetti with hamburger, escalloped potatoes with ham, macaroni and cheese, Spanish rice, vegetable stew, etc.), very simple and quickly prepared meats, salads, vegetables, and desserts.

Preparation (or demonstration) of breakfast:

Perhaps students can plan menu they wish to prepare. May include fruit, bacon, eggs, pancakes, cereal, etc.

Preparation of simple dinner menus: meat, vegetables, salads, desserts.

In every phase of this unit the instructor should try to establish standards for proper techniques and uniform results for basic recipes, rather than try to cover a great deal of territory. Prepare simple things, but prepare them well and be able to duplicate results.

### Food Marketing

Factors affecting costs of foods: season, crop, transportation costs, etc. Relative costs of foods.

Relation of cost to nutritional value of foods. Emphasize the fact that they do not run parallel. For example: the less tender cuts of meat have just as much nutritional value as the very tender cuts, but are much less expensive. It is, therefore, wise to learn to utilize the less expensive foods and make them tempting and good.

Comparison of large and small quantity purchasing. Advantages and disadvantages of each. Can you lay down a set rule concerning quantity purchasing? Why or why not?

Advantages and disadvantages of purchasing by cash or credit.

Advantages and disadvantages of bulk or package goods.



## Duties of a Host

### Etiquette

Duties of host, hostess, and guests.

Carving. (It is very important that a boy know something about carving meats.) Serving.

Proper table arrangement; setting the table.

Table manners: seating of guests, holding silver, posture at table, foods eaten with fingers; do's and don'ts.

Etiquette for all occasions: as a guest in a home, in public places.

Standards of conduct between boys and girls.

## Clothing

### Economics of Clothing

Clothing budget of what you have now, estimated value of all your clothing, and how long each piece can be worn.

Clothing budget of what you will need in the next year, and how much you intend to or can spend.

This section on clothing is intended to emphasize for the student the importance of planning expenditures.

### Selection of Appropriate Clothing

Selection of suitable garments for different occasions—school, sports, social. Samples and catalogs will make this more interesting and helpful.

Proper combination of clothing and accessories: hose, ties, handkerchiefs, shirts, shoes.

Examples can be used here again. The instructor may set up different combinations, both good and bad, and have the boys pick out the good points and faults, and recommend when certain combinations should be worn.

Things to consider in choosing becoming clothing: color, line, texture, style. The relation of clothing to personality. It might be possible here to make special recommendations for each student, or at least to make recommendations for certain types as typified in the class.

### Shopping for Clothing

Judging materials by tests. Study of weaves, finishes, and fibers and comparisons as to durability, comfort, and cost.

What do you need to know to shop intelligently for suits, coats, underwear, hose, shirts, etc.? What do you need to know about workmanship, about durability in relation to cost? How do you know if you are getting your money's worth?

### Care and Repair of Clothing

What kind of hangers are best?

Learn how to brush and hang clothes properly; how to remove spots, sponge and press a suit; how to sew on buttons, do simple mending, darn hose; how to iron a shirt, how to care for shoes.

## Household Management

Organization of work within the home so as to use the least time and labor.

What should the standards for household management and care be? Justify.

Study of division of labor in the home. Do you think that the father and sons should help in the care and management of a home? Justify your stand. If you think that boys should help,

what do you think they should do? Learn how to help to maintain order in the home by: putting things away, dusting, sweeping, scrubbing. Types of architecture, particularly those suitable for your section.

## Household Mechanics

### Labor Saving Devices

Characteristics, cost and value of such things as washing machines, irons, cookers, fans, vacuum cleaners, dishwashers, separators, sewing machines, refrigerators.

The selection, operation and care of these various devices.

Which would you consider most essential and why?

If most of the boys in the class are from homes without electricity, it would be well to consider these devices from that standpoint.

## Money Management

### Personal Budgets

Explanation of budgets and account keeping; purpose and use.

How students spend money, and how much they do spend.

Students work out individual budgets and keep accounts over a period of time.

### Family Budgets and Accounts

Sources of the family income, and how to extend it.

Expenditures of the family.

Stress importance of living within one's income.

What standards must be maintained?

What are necessities, comforts, luxuries, and how do they differ in different families?

What steps must be considered in making a family budget?

## Health and Hygiene

### Personal Health

Essentiality.

Importance of good health habits with regard to food, sleep, rest, exercise, clothing.

Study of common diseases.

Means of preventing illness.

Personal grooming.

### Health in One's Home

Cleanliness and sanitation.

Habits formed in the home.

Emergency care of the sick—first aid.

## Child Care

Responsibility of parenthood.

Study of care of little children: physical, mental, moral.

Study of present day problems in education and training.

What are characteristics of a healthy child?

Study of principles underlying mental hygiene and habit formation.

## Family Relationships

What is function and value of family and home? What part does it play in the development of the individual?

What responsibility does a boy have toward his mother, his father, his brothers and sisters?

Study of the principles on which a home should be founded: Higher things of life; profitable thrift; standards of living; congeniality; love, affection, and understanding; contribution and responsibility of each member.

## A Time Saver in Teaching Grain Judging

NORRIS ENDERS, Teacher,  
Stratton, Nebraska

THIS year I tried out a method in my teaching that I am quite sure will work out. It has proved to be a great time saver to me at my busiest time.

This method is to fix up your samples of grain during the summer and have them judged before your school starts in the fall. For example, I might take 16 samples of wheat and then group these 16 samples into 4 classes. I would number the classes and letter or number the samples and place the labels on the outside of the containers. Quart jars or pound coffee cans make very good containers.

I would then judge these 4 classes of grain and record all the placings and reasons for each class in a small pocket notebook. You can make up 16 classes without using the same two in any one class more than once.

This plan has many advantages: (1) It saves time, because I think you will all agree that you can place samples quite easily after you know what is in them. (2) You can get more judging done during the year because one of the big jobs of the teacher, the judging of the grain, is already completed. (3) You can have better classes because you have them planned and you can make a note as to whether it is an easy or hard class. (4) It is possible to do a better job of judging because you have more time.

This plan has some faults as well, but I think if you are careful most of them can be avoided. They are:

(1) If you lose your notebook which contains your placings and reasons, you will have to do your work all over again. Therefore, I suggest that you make two copies.

(2) Your classes may get ruined if your sample is small and you pour all of it out to be judged and it gets spilled, which sometimes happens. A practice I try to follow is always to save a part of each sample in its original container.

(3) Samples sometimes get mixed, often because spilled grain is put back in the wrong sample. If you do not do this, I believe you will have little or no trouble.

(4) It takes too many samples to work this successfully. However, I do not believe 16 samples is too many if you are going to show your boys differences in grains and seeds.

I do not suggest that you begin this plan by working it out with all the different types of grain or seeds the first year, because you might not think the plan satisfactory in your case. Also it would be just about impossible to work this out with corn.

It is possible to keep classes and samples over from year to year altho I think some of them should be replaced from time to time.

It is really a good thing to go over your samples once a year because there might be slight mixtures that were not there a year ago. This will not take long if you do not replace samples in a class.

I might mention that I quite often use boys that have had judging to help me grade the papers or set up the classes.



# Supervised Practice

H. H. GIBSON

## A Requirement for Effective Project Supervision—the Determination of What Proved and Up-To-Date Practices Are to Be Followed

H. H. GIBSON, Teacher Training,  
Corvallis, Oregon

### Do We Learn What We Practice?

IT IS quite possible for a boy to learn more of management, judgment, knowledge, and skill in a project enterprise in four years under supervision than he would learn in 14 years' dealing with the same enterprise if left entirely to himself without supervision. I say this is possible, but supervised practice also may be conducted in such a way as to mean little more than just farm work which the boy would normally be doing anyway. "We learn *what we practice*" is one way of stating the most important of all laws of learning, and that is one reason why boys frequently learn very little from "supervised" practice. They learn just *what* they practice. Too often *what* they practice may be so general and vague in their thinking and accompanied by so little understanding, that the results in actual learning and profitable experience do not seem to be worth the time and money spent in supervision. *What we practice* is just as important as *practice* itself. Therefore, the following statement: In order for the boy to learn much from practice or for the instructor to do a good job of supervision, both must first have in mind the specific practices that are to be followed, and then the boy under supervision of the instructor must knowingly and purposefully execute these practices as a means of achieving well-defined project goals. These practices should be charted and specified so definitely and concretely as to time, place, and procedure that one can measure what is being done as project work proceeds, and so consequently measure the final results.

Certain studies and observation occurring during the last few years in Oregon have made it quite clear to the supervisor, teacher trainer, and teachers alike that there is a necessity for a more carefully thought-thru and well worked out set of proved and up-to-date practices for each individual project enterprise and project program. Three steps are now being taken to meet this need.

Step 1. Some years ago the state



H. H. Gibson

supervisor and teacher trainer began the practice of spending a part of each summer together visiting and inspecting selected projects in many different departments. Small groups of three or four teachers in different localities would previously visit a number of each other's projects and rate them with the aid of a score card. Those rating highest in each department were then visited in turn by the supervisor and teacher trainer in company with the local teacher.

Among the several questions considered in making a study of the selection and efficiency of the project program, this one kept coming more and more to the front in our thinking: "What specific and up-to-date practices is the project student consciously following and putting into operation as a result of his agricultural instruction and project supervision?" Boys' projects were carefully checked to determine practices followed in each enterprise. They were quizzed thoroughly on the reasons for their practices. Two or three hours were usually taken in visiting a project. Written reports were made of projects visited. Last year these reports were put in mimeographed form and are now being used effectively in our teacher-training course and district conferences of teachers to improve our methods in supervised practice. Herewith is given a partial report of one record as it pertains only to the more important practices followed:

Project number, 17  
Class, Sophomore  
Acres in home farm, 125  
Kind of Soil, Wapato, Amity,  
Concord Silt Loam  
Farm survey (omitted here)

### Long Time Project Program

- Ag. I First Year  
1 A. Certified Potatoes  
1 A. Chewing Fescue
- Ag. II Second Year  
1 A. Red Clover  
2 A. Chewing Fescue  
1½ A. Ladino Clover  
3 Dairy Heifers  
1 A. Potatoes

### Future Plans:

- 12 A. Chewing Fescue

TABLE I

Jobs or things to be done.	Ways and means: Practices to be followed.	Practices actually followed.
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- 4 Dairy Heifers
- 3 Yearling Heifers
- 2 A. Ladino Clover
- 2 A. Grain
- 1 A. Red Clover

### Desirable Features of Project

1. Purchased calves from cows producing 300 lbs. of butterfat or more.
2. Feeding practice for calves: 1 quart whole milk 3 times a day for first week. Second week, 1¼ quarts whole milk and at 3½ weeks old, started to feed skim milk. At 2½ months was feeding at the rate of 17 lbs. of skim milk daily and .8 lbs. of oats twice a day.
3. Used scales for weighing feed.
4. Built stanchions for calves.
5. Calves are on clover pasture.
6. Cleared and prepared land along creek bottom for Ladino Clover.
7. Irrigated by gravity system. Planted mixture of four pounds of Ladino Clover, 3 pounds of Redtop, 3 pounds Meadow Fescue, and 3 pounds English Rye.
8. Turned heifers on Ladino pasture in fall.
9. Selected Certified Burbank Potato Seed.
10. Applied 300 pounds of commercial fertilizer to potatoes, part in spring and part in fall: 200 pounds of Ammo-Phos and 100 pounds of potash.
11. Applied 200 pounds of Ammo-Phos fertilizer to Chewing Fescue.
12. Has check plot in a field of Chewing Fescue where no fertilizer was applied. It shows definite advantages of the use of commercial fertilizer.
13. Made a roller for use in preparing Ladino Clover field.
14. Repaired cultivator, disk harrow, and built a potato-dipping vat in the farm shop at school.
15. Has a very definite well-planned program for the length of time enrolled in Smith-Hughes Agriculture.
16. Has good understanding and knowledge of project practices.

This project was rated high because of the quality of the practices used, the definite goals set up for project, making most of opportunities, and especially because of the use and understanding of the scientific knowledge relating to the practices followed.

The following conclusions and values have come from this co-operative effort of inspecting and supervising projects.

a. Project interests and results, and the efficiency of project supervision depend largely upon the clearness of the pupil's project goals, and the character of the practices which he uses knowingly and purposefully to achieve his goals.

b. Project supervision offers the best of all opportunities to do effective teaching—that is individual teaching on the

job. Teachers are discovering how much actual teaching they can do on project supervision visits.

c. Students who have well-defined and clearly set up goals and are pursuing practices to achieve these goals are encountering many problems that make for continuing interest and study.

d. Teachers should make much more use in classroom teaching of the problems which are discovered in project supervision.

e. Many teachers could increase the effectiveness of their project supervision visits by making a more systematic inspection of project work. Inspection, of course, is for the sake of teaching. A well worked out set of practices for each project enterprise is the most important item the instructor can have in his "check list." Teachers should not visit project unprepared.

Question: "What are the pivotal points in inspection?"

It is frankly admitted that the teacher trainer and state supervisor in these summer projects tours are getting a revelation of some of their own weaknesses and shortcomings. They perhaps are learning more than the teachers. How to give trainees the participating experiences they need for effective project supervision in their pre-employment training is a problem that has not been half solved. College students seem to learn *what* they practice the same as do the high school students in agriculture. Many teachers of agriculture seemed to have learned too well what they practiced in college; viz., giving too much emphasis to classroom teaching out of relation to supervised farming. These group project tours are now helping teachers to see how supervised farming may be used as a method of teaching, and not merely as a means of applying some information which had its origin within the walls of a classroom. Teachers of agriculture need to give themselves a very thoro examination now and then to see whether they have not acquired careless habits of project supervision. Project supervision from the individual cost-per-pupil standpoint is the most expensive of all forms of teaching. In order to be in a position to ask for more travel money, the instructor should see to it that what is already available is made to go as far as possible in giving boys education in farming.

Step 2. Recognition of the necessity for both instructor and pupils having a well worked out list of up-to-date practices for each important project enterprise has led to the improvement in both the form and methods of project planning in Oregon.

During the summer short course of 1936 a committee of teachers including the writer was appointed by the state supervisor, Mr. Cooley, to study and report on what could be done to improve

the quality of the project plans. The examination of many project plans revealed too frequently that either general and related information, or else general conclusion or recommendations, cluttered up the written project plans to such an extent that the specific project practices, which the individual should follow in executing his project, did not stand out clearly in bold relief. In some instances it was necessary to read thru considerable written material before discovering a single specific practice that would serve as a guide or plan of action for the boy in carrying out some phase of his project program. The committee reported in its recommendations that, while related facts and information are important in thinking out problems and in arriving at practices to follow, only practices specifically and concisely stated should appear in the final written record of project plans and that these should always be stated in terms of the boy's individual project. The committee recommended that notes which may be taken in the study and analysis of the project problems, or of the facts and information used in arriving at project practices, together with the tentative project plans, be confined to the student's class and schoolroom notebook.

The project practice record form now in use is ruled crosswise of the page into three columns as indicated in Table I.

This form may seem somewhat arbitrary and stilted and to suggest a tendency to short-circuit thinking. On the contrary, we believe it tends to promote thinking. There is a tendency for our thinking in project planning to be too hazy, to stop too soon and before it finally terminates in the form of decisions and well thought-thru practices. Perhaps this is partly due to our methods of teaching, to our failure to discover and to set up worth-while and interesting problems—problems that grow out of project and home farm situations, and which by their very nature require the pupils to make decisions and to work out practices for doing some job that needs to be done. After all, a project job is something to be done, not something on which to hang useless information. Somebody should write the story of the misuse and abuse of job analysis as applied to farm enterprises. Too often they have been used as vehicles for teaching information, rather than as devices for discovering abilities that need to be acquired and information that may be needed in solving problems and in arriving at practices to follow in doing the job.

Step 3. Instructional materials which are now being prepared for use of teachers of agriculture in Oregon focus attention upon the necessity for setting up proved and recommended practices for various crop and animal enterprises.

In setting up the form for these crop

and animal enterprise studies, suggested and proved practices are placed in the first column and related facts and factors, ways and means in the second column as indicated in Table II.

There is not sufficient space here to illustrate adequately the form and content of these studies but a limited number of single copies are available upon request. This form of organization is of special use to instructors in supervising the boys in project study and planning and in carrying out their individual project practices. When teachers have students taking projects in a number of different enterprises, it is too much to expect that without outside help they can be informed and kept up-to-date to the extent that they can intelligently supervise the pupils in project planning and in project work. For example, at this writing instructional materials on the strawberry enterprise are being prepared with the assistance of teachers, the experiment station, and the extension staff. Materials of use to the teacher in this enterprise are found in nine Oregon station bulletins and circulars and these do not cover all the needs of the instructor in strawberry project planning and supervision. Besides, there are important federal bulletins and other sources of information. The local teacher does not have time to sort out all the proved or suggested practices, consolidate them and then finally co-ordinate them with the practices and conditions he finds prevailing in his local community. Besides, he needs time to organize his materials in problem form for teaching and with reference to local situations and needs. A form of organization which lists and places practices in the first and separate column, and related facts and information, ways and means in a second column is providing our teachers with a ready guide to practices which they need to consider in supervising project study and planning and project work.

The forerunner of these enterprise studies for use of agricultural instructors was a 26-page mimeograph by the writer on "Feeding and Management of the Brood Sow and Her Two Litters of Pigs." In addition to the main body of material which is organized in the two-column form already explained, there is given a two-page summary of recommended practices in seasonal order from November 1 of one year to November 1 of the next year, covering two weaner pig cycles. The use of the swine enterprise material by our agriculture instructors has proved so helpful that similar studies for other enterprises are now being made as rapidly as possible thru various forms of co-operative effort already mentioned.

A possible criticism of the preparation of material in the form of suggested practices may be made on the ground that too much study and thinking has been done for the teacher, thinking which he needs to do for himself. This should not be so. Thinking should precede, accompany, and follow practice. Supervised practice may degenerate to a low level of mechanical or operative activity. Thinking should be an important phase of all practice. "We learn by thinking." A well worked out and thought-thru set of practices instead of inhibiting thinking should serve as a constant reminder to the instructor that

(Continued on page 218)

TABLE II

# FEEDING, CARE AND MANAGEMENT OF THE BROOD SOW AND HER TWO LITTERS OF PIGS TO WEANING AGE

Suggested practices to follow	Ways and means; related facts

V. G. MARTIN

# Farmer Classes

J. B. McCLELLAND

## Training Teachers for Evening School Work

H. M. Hamlin,  
Department of Vocational Agriculture,  
Ames, Iowa

**T**HIS year the 129 Iowa teachers of vocational agriculture plan to conduct 134 part-time and evening schools. Only 11 teachers will conduct neither. Most of the credit for establishing this extensive adult program belongs to the teachers and to the state supervisors. The teacher-training department and Iowa State College in general have had some share, however.

The evening school which served as the nucleus of the early program of adult education in the state was in a practice school of the college. Adult classes in the practice centers have from that time on had an important affect in establishing evening-school instruction in the state.

For many years seniors preparing to teach have taken a course each winter based upon observation of adult work. Usually about 10 adult classes are observed and analyzed. It is believed that these first-hand contacts have had much to do with the common tendency among beginning teachers to undertake and succeed with evening classes. Almost none of the students taking this course who have gone the year following in the teaching of vocational agriculture have failed to carry on successful evening schools. This observation experience has substituted very satisfactorily for actual practice in teaching adults. Perhaps this has been true mainly because the methods taught the students for use with high-school classes resemble closely those used with adults, and extended practice in high-school teaching is afforded. It has not been found in Iowa that two distinct approaches are needed in teaching high-school pupils and in teaching adults.

Helps have also been provided for teachers in the field. In June, 1936, each department in the agricultural division of the college prepared a set of suggested evening-school topics for the winter of 1936-37. These were mimeographed and sent to all teachers. The teachers then consulted with their evening-school councils and subjects were tentatively selected previous to the annual evening-school conference in July. On the first day of this conference representatives from the various college departments discussed the possibilities in the subjects they had outlined, so that all teachers had an opportunity to survey the general field. The second day each teacher spent with the department best able to help him with his particular



H. M. Hamlin

topic. In several cases special lists of references and detailed suggestions were worked out by department staffs. The teachers, having made contacts with specialists, have felt free to consult further with them or to write them regarding their special problems.

A three-weeks summer course for teachers and county agents offered an opportunity to secure in detail modern subject matter in one field for presentation in the evening class of the following winter. As enrollment justifies it, additional three-weeks courses will be added.

In October a 36-page mineographed statement setting forth best practice in conducting adult schools was mailed by the teacher-training department to all teachers.

These services, gradually developed over a period of years, have had their effect. They are not, however, complete. Further developments are expected as time goes on.

Probably the greatest service of all would be to give trainees more practice while in college in planning unit courses and collecting teaching materials related to them. Some of our teachers are now able to organize independently and teach, with little assistance, courses in almost any field for which there may be demand among the farmers. Beginning next year, more experience along this line will be provided for senior trainees.

## Evening-School Council

RALPH E. RULIFSON, Instructor,  
Manilla, Iowa

**T**HE Manilla evening school is organized for both men and women. They meet as a combined group for a 15-minute opening program. Singing and several short entertaining numbers before the regular lesson seem to add to the interest and enthusiasm. After the program the men and women meet in separate groups, the women being instructed by the home economics teacher.

The lessons last approximately one hour and a half and then the two classes again get together for light refreshments. This gives time for visiting and further discussion of the problems taken up in class.

The evening-school council consisting of five men in charge of the planning is composed of four men elected by the group and the fifth, a member of the school board, selected by them. Each year at the final meeting new men are elected to replace the two who have served for the past two years. This allows for a continuous council which always has members familiar with its duties.

During the summer the council lays plans for the ensuing year. The course is chosen, dates set for meetings, speakers selected and plans advanced for follow-up work. This group of men conducts the administrative affairs of the

school, thus creating a feeling of responsibility for its success.

The problems to be studied were chosen from the desires of the community as observed by the evening-school council. Soil Conservation was selected as the main topic and then the problems were arranged for the various meetings.

This being done early in the summer, considerable time was left in which to contact the men of the community. Each individual within a reasonable distance of the school was called upon by one or more members of the council and the instructor. During this visit the farmers were given an opportunity to enroll. Other information about the school and the topics to be discussed at each meeting were sent to those enrolled before the school started on the first Thursday evening in November.

The plan of round-table discussion was used in the lessons. A number of soil specialists were secured to help with problems at some of the meetings. In most cases the men stated their own respective problems which brought comment and experiences from others.

The topics discussed were: (1) Feeds and feeding under present drought conditions; (2) soil resources and land use planning; (3) erosion control and moisture conserving cultural practices; (4) terracing; (5) soil treatments; (6) gully control; (7) crop rotations; (8) forestry and soil conservation; (9) pasture management; (10) wild life and soil conservation; (11) graduation.

At the close of the series of meetings a graduation night completed the course. A special program was arranged and an outstanding speaker secured for the evening's address. Certificates bearing the signatures of the superintendent, council chairman, and instructor were presented to those attending at least seven of the regular meetings. Books containing lesson summaries and other information were presented to all men who were present at least twice. The men looked forward to this meeting, at which time they could carry home something material for their efforts.

Some of the improved practices of this evening school are included in the following summary:

Test soil for acidity; apply limestone on acid soil; apply commercial fertilizers; haul out manure frequently; use winter cover crops; use sod strips; use contour and strip cropping; terrace some of the farm; build dams in gullies; plow under legume and non-legume crops; disk and reseed permanent pastures; clip or mow pastures; rotate and avoid overgrazing of pastures; use supplementary pastures; use tree plantings in gullies; start black locust seeds in nursery row for further planting.

Thru the assistance and co-operation of a near-by conservation camp, a number of these practices will be put into operation for the first time in this community. Tours to the State College and conservation camps are planned as a means of keeping the work alive during the summer. Occasional visits to the



farms tend to assist in carrying thru the follow-up program, as well as helping to solve other problems that arise.

## Creating Interest in Part-Time Instruction

HOWARD F. FOX, Instructor,  
Loysburg, Pennsylvania

THE problem of creating interest in a part-time class, in my opinion, divides itself into two parts. The first job is to get enough people interested to come to a part-time class to make it worth while, and the second is to make the course so interesting that they will continue to come.

Here at the Robert P. Smith School this year we used several means of solving the first problem. We have 54 boys enrolled in regular all-day vocational agriculture. Each boy submitted a list of young men he knew who were out of school, between the ages of 16 and 30. These lists were checked and duplicates omitted. The names of those attending former short courses were included if not already listed. This gave us a mailing list of 105 people in our patronage area. The following letter was then sent to all prospective students and a stamped, self-addressed reply card was enclosed.

Dear Friend:

It has been suggested that possibly you would be interested in attending some meetings at the Robert Smith High School during the next month.

Some of the young fellows about your age have agreed to get together next Monday evening, March 8 at 7:45 P. M. At that time we can discuss topics and choose those which will be of interest to the group. We may have the use of the shop if we desire. May I count on you to be present?

On the enclosed postcard you will kindly check the topic or topics which will be of the most interest and help to you, sign your name and return to me. If there are other things in which you are interested please write them on the blank line.

There are no charges.

Sincerely yours,

It may be interesting to note here that in the letter we made an error in the time of the first meeting, stating a date that was a week past when the letter was mailed. This necessitated sending a second card two days later, when the error was called to our attention. As I reflect upon this now, I believe it had a good point, in that the follow-up card again called attention to the proposed meetings.

Probably a letter is the best method of creating interest in part-time evening work, with one possible exception, that of a personal visit; but this has the disadvantage of requiring a greater amount of time and expense.

Other methods used were a few personal visits to leaders in the community, invitations thru the F. F. A. boys, and newspaper publicity. The latter we did not use this year, but have in the past. It lacks the personal touch

Dear Mr. Fox:

I am interested in discussions of the following topics in a series of meetings relating to agriculture.

Farm accounts  
Farm animals  
Farm crops  
Forestry

Farm shop (Tool-fitting, soldering, rope-work, electricity, woodwork.)

Fruit production  
Managing a farm..  
Poultry  
Gardening (Vegetable or ornamental)

Name.....

that a letter gives and we felt the 105 names covered the community quite thoroly.

From our 105 reply cards mailed there were 24 returned, or about 23 percent. Most of the enterprises were checked, but farm shop work led and we felt it would be the course to teach, provided all came to the meetings who stated that as their choice.

Accordingly, we prepared a short general talk on shop work for the first night, and also some timely information on vegetable varieties, as gardening was checked quite frequently.

May I digress to say that I believe the first night is the most important? We must make a favorable impression at that first meeting. That does not mean that we may let down the bars later on, for these people are not required to come. Each night as one goes home he wonders, "Did I create enough interest, was it worth while, and will they be back for the next meeting?"

At our first meeting 28 were present. We again made a survey of the group to see what those present were interested in, as some came who did not return cards and others were not there who had returned cards. Again farm shop work was most desired, with dairying a fair second choice. Mr. Kenneth Mowry, a student teacher with us at the time from the Pennsylvania State College, volunteered to take charge of the discussions for the dairy group. Since he had considerable experience in this line, we turned this work over to him. They visited several dairy farms and used the classroom for group discussions. The results were very satisfactory.

In the shop group we further inquired in what jobs the group present was most interested. This resulted in a course of study which was announced at the second meeting as follows: Tool-fitting, 1 night; Soldering, 1 night; Electricity, 1 night; Woodwork, 3 nights; and Wood-finishing, 1 night.

Each period was opened with a discussion led by the instructor for 30 to 45 minutes, during which time questions were asked; and then a laboratory period followed when the class members performed the work demonstrated. As facilities would not permit the entire group to do the same work at one time, some members worked on jobs which had been discussed at previous meetings. Class lasted from 7:45 to 10:00. Sometimes it was necessary to turn out the lights to get the boys to stop. However, this appeared to us as a healthy sign as we saw interest manifested and looked for the boys back at the next meeting.

An accurate roll was kept of those attending and our summary for seven meetings showed that 53 different people had attended. However, some of these people attended only one night for the particular subject in which they were

interested. Anyone who attended a minimum of three nights was counted on the regular enrollment list. Thirty-one boys were thus enrolled and we had an average attendance of 80 percent. The farthest distance traveled was 12 miles.

Of methods possible of creating interest in evening work the following, in my mind, are outstanding:

1. A thoro survey of the community for all prospective students.
2. A personal letter or visit.
3. Selecting the course most desired.
4. Pupil activity but no assigned lessons.
5. A well directed discussion.
6. A successful part-time class will go a long way toward creating interest for the next year.

## Evening Course in Farm Law

PAUL AURINGER, Instructor,  
Charles City, Iowa

THE legality of a business transaction is always an interesting topic and a good one for an argument most anytime, especially if there is some question involved. Knowledge as to the right or wrong is always a satisfaction. Ignorance of common business law often proves costly and adequate preparation to prevent such mistakes is generally time well spent.

Thus reasoned our evening-school advisory council when it agreed that a course in farm law would be timely and worth while. The scarcity of information appearing in farm periodicals, dealing with business law, was another factor which influenced their decision.

As a result of this decision an outline was set up to be used as a guide. The fact that there was little available literature dealing with an evening school in farm law did not seem to offer much difficulty. There were so many questions to be answered that the problem was where to stop, not where to start.

Problems, or cases, involving the subject matter were profuse altho somewhat similar. Skar's "Cases in Commercial Law," which is published by the South Western Publishing Company, of Cincinnati, proved helpful. The new text by Green, "Law for the American Farmer," which is published by Macmillan, and our own Iowa Code provided a source of reference material.

Our procedure in the classroom was as follows:

1. The case was submitted to the group and opinions and reasons for same were called for. (It might be well to mention that there was plenty of disagreement, especially on some of the questions which should be familiar to

the group. Thus there were always two sides.) The correct decisions were to be found in the assignment which was to follow and the group knew it, so that a certain amount of caution was exercised by them in the preliminary answers.

2. The assignment which carried the answers to the previous questions was given to the class.

3. The questions were again put to the class and opinions asked for, as was done at the beginning. (Still there was considerable disagreement.)

4. After the opportunity had been given each to state his decision, the decision of the judge and his reasons were then presented.

While this lesson might have been very faulty from the angle of a teaching score card, there was a great deal of interest and we felt that the questions were well solved at the conclusion.

Skar's reference proved especially valuable because it gave the judge's decision and his reasons. This text of cases is also valuable because there are many dealing with problems in agriculture and many in which the terminology may be so changed that they are well adapted.

Of course, we found many cases in which the men were directly involved. These are the best.

Following is an outline of the course:

1. Origin of courts and laws
  - a. Sources of laws
2. Property:
  - a. Real
  - b. Personal
  - c. Tangible
  - d. Intangible
3. Contracts and problems relating to:
  - a. Legality
  - b. Performance (failure and penalties for failure to perform)
  - c. Responsibilities of parties
  - d. Considerations
  - e. Oral and written contracts
  - f. Mistakes
  - g. Enforcements
4. Leases—types:
  - a. Enforcements of legal clauses
  - b. Responsibilities of parties involved
5. Problems relating to trespass and strays
6. Fences—legality as to:
  - a. Types
  - b. Placement or location
  - c. Upkeep and maintenance
7. Weed and seed laws which relate to:
  - a. Enforcement
  - b. Control methods (legal)
  - c. Seed contamination
  - d. Inter- and intra-state transactions
  - e. Liabilities of dealers and growers
8. Feed laws, legal requirements as to labels, etc.
9. Miscellaneous questions relating to:
  - a. Pure milk
  - b. Threshing and labor problems
  - c. Service fees
  - d. Progeny of domestic animals
  - e. Liability for injury done by dogs
  - f. Express and implied warranty in public and private sales
  - g. Highway rights

To be ignorant of the lives of the most celebrated men of antiquity is to continue in a state of childhood all our days.—*Plutarch*.

## Why an Evening School?

MARVIN O. CASTLE, Instructor,  
Blue Rapids, Kansas

WHAT is the principal reason for including evening-school work in our annual program? Is it to become better acquainted with the adult farmers, to make a favorable impression with the school authorities, to raise the yearly income a little, or to improve the farming conditions of the community? Although the first mentioned results are by-products to be desired, improving agricultural conditions should be the main product of the evening school.

Last winter 27 adult farmers came regularly 10 cold, stormy nights to study together the problems in "Soil Improvement and Crop Management." At the last evening-school meeting the previous year, the group selected the subject and the problems that were most interesting to them to study the coming year. During the following summer when coming in contact with the farmers, the teacher obtained many valuable suggestions and made use of them in the school. This, more than anything else, developed the necessary interest.

The problems discussed in the course were:

1. The soil and its relation to crop production.
2. Maintenance of soil fertility.
3. Methods of gaining soil fertility.
4. Adapted varieties and seed handling.
5. Planning crop rotations.
6. Management of legume crops.
7. Seedbed preparation.
8. Cultivation.
9. Soil erosion.
10. Pasture management.

During my first evening course the state supervisor visited the class one night and after the meeting offered some valuable suggestions. The plan of making charts on white wrapping paper rather than on the blackboard was especially helpful. The use of charts is a most valuable means of teaching. Charts found in state experiment station bulletins will bring up many points for discussion, and they also can be made to answer, without doubt in the minds of the members, many important questions.

An example of a chart which would answer a question and bring up many other questions might be: "When is the best time to plow under sweet clover?"

Date of plowing	Lbs. of Nitrogen Per Acre		
	Tops of hay	Roots	Total
Sept. 6, 1922	59	45	104
Sept. 28, 1922	65	72	137
Mar. 31, 1923	15	162	177
Apr. 24, 1923	63	103	166
May 10, 1923	128	75	203
May 24, 1923	134	56	190
June 14, 1923	132	32	164
July 2, 1923	137	15	152
July 19, 1923	119	14	133
Aug. 8, 1923	136	15	151

Kansas Experiment Station.

The chart shows an answer of around May 10, when the total amount of nitrogen is the highest. Then other questions arise such as: "When is the best time to cut sweet clover for hay?" "Which becomes available first, the nitrogen in the roots or that in the tops?" "Would plowing under when the plant was succulent cause a more rapid decomposition?" These questions can

usually be answered by the members after studying the charts and from their own experiences.

During the course a list of improved practices was made. Such practices as the following were selected: maintaining soil fertility by the use of barnyard manure, exercising care in selecting seeds for planting, testing seeds, using phosphate, planning a crop rotation, inoculating seed of legumes when doubtful, using more legumes, farming on the contour, stopping gullies by soil-saving dams of brush or straw, controlling erosion by cropping practices, terracing, rotating pastures, and eradicating weeds at the right time for permanent results.

Each member decided upon one or more new practices for his farm. Ten members are using phosphate for the first time. Experiments studied showed phosphate to increase the yield of wheat nine bushels on the average for this section of the state. During the spring and summer there were many opportunities to supervise programs which had been outlined during the course. Contouring, rotations, strip-farming and controlling weeds were among the jobs which gave the best chances for follow-up with supervision.

## Evening Class in Agricultural Leadership

IRA L. PLANK, Teacher,  
Winfield, Kansas

SOME time ago, I accompanied a group of farmers to an annual meeting of our local Production Credit Association. At that meeting a member of our group was elected president of the association for the ensuing year. As is the usual custom he was called upon to make a speech following his election. I thought he did very well but as is usual with such speeches this one was not particularly interesting. On our way home our new president broke a long silence by saying to me: "Mr. Plank, why don't you organize a class in public speaking in your adult classes next winter?" The question was further discussed as we rode along.

As a result of this conversation our plans for adult education classes for the year 1936-37 called for one section in public speaking—only we did not call it public speaking. We called the course agricultural leadership. In our announcement about the course we explained that the subject would deal mainly with the "art of persuading people."

The class was limited to 20 people. The actual enrollment was 19. I had asked the farm bureau office to send out notices to all club leaders and township committeemen. I sent out letters to people who I knew were interested in rural church work and announced the course at a meeting of the county farmers union.

I felt that if I were to give these people actual practice in public speaking it would be necessary to keep them from being self-conscious during the practice period. I must avoid "urging" these people to make speeches. In fact, I must say very little about practicing speeches until each had his or her speech

outlined and ready to deliver. All arrangements for performance were made privately and, of course, in advance of each meeting. After each member had performed at least once there was less need for being careful about making these people self-conscious and criticism could be more freely given.

The problem of getting club members to raise a prize-winning pig was used as a situation to be analyzed. The most likely approach to this problem would be for the leader to make an inspirational speech on the subject, "Raising a Prize-winning Pig." The class set to work outlining this subject: introduction, body, and conclusion. Two evening sessions had passed before the speediest members of the class had assembled the material for their speeches. At the close of the first session, however, I had arranged with two of the more advanced of the class to try out their speeches. This they did the latter part of the second meeting of the class. From then on until the close of the ten meetings the second hour of each period was used in practicing speeches. Other subjects used by members of the class were: Co-operation, Liquor Control, A Game I Devised, What's in a Dress, The Chaperon, Discipline of Youth, and several speeches of introduction, acceptance, farewell, and of tribute in addition to about ten speeches on "Raising a Prize-winning Pig."

Each class period was divided into two periods of one hour each. The first hour was spent in outlining speeches and in discussing such topics as how to talk with tongue, teeth, lips, head, eyes, body, and hands. We discussed the rational versus the emotional approach in persuasion. We discussed methods of avoiding the development of antagonism among the group toward its leader. When we want our group to undertake a certain project, how shall we approach the problem? Here we have need of all the elements of good public speech. For my help in preparing for these discussions I used Professor Judson's new book, "Public Speaking for Future Farmers," a great deal.

The second period, as I have said, was devoted almost entirely to practice in speech making. I believe almost every member did some practicing outside the class. All were urged to do so. One of the best speeches of the session was given by a member of the class who is past 60 years old. I had tried for some time to get him to do his exercise before the class but he seemed not to be ready. One evening he said he was ready. He said that he had been plowing all day and had practiced as he went back and forth across the field. He did well.

To sum up this discussion I have this to suggest:

1. Seek enrollment among those interested in leadership work.
2. Practice the art of speech yourself until you can convince all the members of your class that their success as leaders depends largely on their ability to effectively persuade people.
3. Discourage apologies in introductions. Encourage sincerity.
4. Encourage the use of simple speeches of short length.
5. Urge your members to practice outside of class until they are sure of themselves.

## Results of Part-Time Work

S. M. JACKSON, Supervisor,  
Baton Rouge, Louisiana

MUCH interest has been manifested in part-time class instruction in vocational agriculture since it started in Louisiana in January, 1933. All agriculture departments have continued to offer this instruction to the out-of-school youth, and many boys have been established in farming. Some of the boys that have completed the high-school course in vocational agriculture have continued their work in part-time groups and have kept their membership in the F. F. A. The following is a sample of the records of these part-time members.

ALTON TASSIN—Bobby Jones Chapter, Marksville, Louisiana, age—18 years; had four years of vocational agriculture; received State Farmer Degree, 1935; owns 40 acres of land; has sufficient capital to purchase 30 more acres of land, adjoining present farm; and is supporting his family.

The enterprises included on his farm are as follows: cotton, corn and legumes, peanuts, Irish potatoes, sweet

potatoes, sugar cane, poultry, orchard, truck, clover, dairy cattle, swine, and bees.

His labor income during high school was \$505.43 and income from other agricultural work, \$423.65.

Investments in farming:

Land.....	\$1,013
Livestock.....	275
Bees.....	25
Poultry.....	25
Crops.....	405
Farm equipment.....	175
Farm shop equipment.....	92
Horse, saddle, etc.....	100
Buildings.....	75
Miscellaneous.....	260
Checking account.....	50
Stocks and bonds.....	25

\$2,520

Leadership activities:

F. F. A. treasurer, reporter, director of all committees, and parliamentarian, secretary-treasurer of sophomore class, school parliamentarian, captain school basketball team, American cotton co-op. member and crop reporter, and member F. F. A. judging and basketball teams. Scholarship—B average.

## Farmingdale Students Win at Egg Show

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Farmingdale, Long Island

WITH a score of 97¾ points on an entry of one dozen white eggs, students in poultry husbandry at the State Institute of Applied Agriculture won first place in the vocational agriculture class at the Neppco Egg Show. The show was held as a feature of the Poultry Industries Exposition, New York City, November 2-6 and has been called the egg show of the northeast. The students entered one dozen white eggs and one dozen brown, the latter taking second place with a score of 94¼ points, under the name of the NYSSA Poultry Association. This group, the members of which are specializing in poultry husbandry, has its own organization, enters eggs in various shows, and has programs on which poultrymen from considerable distances appear.

The entry of white eggs missed sweepstakes award by ¼ of a point. The plaque for highest score in any class went to a producer who no doubt has had

years of experience in picking eggs for shows. At any rate, the student entry placed second in competition with 380 selections entered by producers, co-operative egg marketing organizations, shippers, packers and receivers, state entries, commercial carton.

Of what value to a student is participation in an Egg Show, one may ask. The answer seems obvious in view of the fact that people were interested enough to send 380 entries to this show, and this is only one of many held. If then, those in the poultry business find it worth while to compete in such shows and enjoy comparing one selection with another, it would seem to be good teaching to prepare students for such competition while they are still in school. A by-product of such preparation is practice in grading eggs by weight and grading for interior quality, which close selections make necessary. The instructor who is involved shares in the enterprise, and his reward is the stimulus received by observing students at work on the job of selecting eggs for the entry on their own time.

The score card and scores of the two entries are as follows:

SCORE CARD		First Prize Dozen (White Eggs)	Second Prize Dozen (Brown Eggs)
Item	Value	CUTS	CUTS
Size (total weight).....	12	0	0
Uniformity of weight.....	12	0	1
Uniformity of color.....	12	¼	1¾
Uniformity of shape.....	10	¾	1
Shell texture.....	12	1	1
Condition.....	6	¼	¼
Interior quality.....	36	0	¾
Total.....	100	2¼	5¾
Total cuts.....		2¼	5¾
Total score.....		97¾	94¼



# Studies and Investigations

E. C. MAGILL

E. R. ALEXANDER

## A Comparison of Methods in Vocational Agriculture With Varying Instructional Groups

SAM HITCHCOCK, State Supervisor,  
Wyoming, and  
CARL G. HOWARD, Teacher Training,  
University of Idaho

NO ONE person is qualified to say that any particular method or device which may be used in teaching any job to any class is better or worse than any other he might use. The choice of method actually used does have some bearing on the effectiveness of instruction, however. The credit given to method for the success of any teaching unit must be governed by the personal element. Observation of teaching leads one to believe that some teachers may use any method successfully while others have little success with any method used. This might seem to indicate that a study resulting in a list of approved methods would have no effect on teaching generally. The opposite is really true, in that the use of methods which are adapted to the instructional group and which the teacher can use would certainly make the possibility of efficient instruction materially higher.

The evening and part-time class groups prove this most effectively, because students remain in attendance in these classes because of interest and not compulsion, eliminating disciplinary problems entirely.

During 1934-5 conditions demonstrated forcibly that successful agricultural education is determined largely by the use of methods which are suited to the needs and experiences of the class group and the personal characteristics, experiences, and abilities of the teacher.

Briefly, the conditions in 1934-5 saw an increase of evening and part-time classes in Wyoming of around 700 percent, brought about by an emergency relief white collar project, providing an assistant in charge of evening and part-time class work attached to the supervisory staff working out of the state office. The age and experience of this assistant were such that he made very effective use of the lecture procedure with adult farmers in evening classes, partly because he was selling them ideas. The procedure followed was that he organized an evening or part-time class for the regular vocational agriculture teacher and assisted in the first one or two meetings. The local teacher then completed the school alone. The use of the lecture procedure as an example did not allow participating experience in conference discussions, which was recommended for general use in such classes. Young and inexperienced teachers were somewhat lost because conference discussion was recommended and the lecture procedure followed. Some of

them tried the conference procedure, anyhow, and survived; many of the others faced a dwindling away of per-

sonnel, requiring a return of the assistant to teach each of the remaining classes scheduled.

FUNDAMENTAL METHOD	PARTICULAR METHOD	DEVICES	Groups With Whom the Device Can Be Used Most Effectively				
			Rated With Relative Value (1-10)				
			Adult Farmers	Farm Young Men	Adv'd Farm Boys in School	1st Yr. Farm Boys in School	Town Boys in School
I. Telling (Any telling of facts or ideas through words, printed or spoken in any form.)	A. Printed Information (Include any written information.)	1. Bulletins or Mimeographed Information.....	8.3	7.3	6.6	5.0	3.4
		2. Reference Books.....	5.3	6.3	6.5	6.6	5.9
		3. "Project" record books of others.....	4.3	5.3	6.8	6.8	4.9
		4. Notebook of others.....	3.7	4.3	5.7	6.3	5.7
		5. Job Instruction Sheets.....	5.0	6.1	7.0	4.5	6.2
		6. Analyses by others.....	5.9	6.4	6.5	5.3	4.5
		7. Written Reports.....	5.6	5.6	9.9	5.4	4.8
		8. Stories by others.....	7.2	6.8	7.0	6.7	6.8
		9. Tables, Charts and Graphs.....	8.1	7.8	7.9	5.8	4.8
		(Rank of Particular Method)	6.2	6.7	6.9	6.3	5.6
	B. Talk	1. Oral Speech by Instructor.....	6.7	6.2	6.2	6.4	6.5
		2. Oral Speech aided by visual materials.....	7.2	7.6	7.5	7.0	6.7
		3. Talk by Specialist.....	8.3	7.6	7.5	5.1	4.5
		4. Learner's Oral Report (Talk).....	6.4	6.4	6.5	5.8	6.9
		5. Talking Movie.....	7.7	7.6	7.7	7.4	7.1
		6. Phonograph.....	3.7	4.0	3.8	3.4	3.2
		7. Radio.....	7.2	6.8	6.4	5.3	5.0
		8. Television.....	7.3	6.8	6.8	5.4	4.9
		(Rank of Particular Method)	7.1	6.7	6.5	5.6	4.9
	C. Discussion	1. Blackboard Analysis Procedures.....	7.4	7.3	8.0	6.6	5.5
		2. Interchange of Opinions and Ideas Between Learners.....	8.8	7.3	7.4	5.9	4.4
		3. Interchange Opinions and Ideas Between Learners and Inst's.....	8.9	8.4	7.8	6.3	5.0
		4. Field Suggestions (On Job).....	8.6	8.4	7.8	7.2	5.8
		5. Learners Relate Experiences.....	8.4	7.9	7.6	5.6	4.0
		(Rank of Particular Method)	7.9	7.4	7.3	5.9	4.9
	D. Panel	1. Informational Questions.....	7.0	6.6	6.5	4.9	4.2
		2. Impart New Information.....	7.0	6.8	6.7	5.0	4.4
		3. Present Facts on Controversial Issues.....	7.9	6.7	6.6	4.8	3.8
		4. Salesmanship for New Practices.....	6.4	6.8	6.6	5.2	4.1
		(Rank of Particular Method)	6.5	5.9	5.6	4.5	3.6
	E. Conference	1. Blackboard Analysis Procedures.....	8.5	7.2	7.6	6.1	4.8
		2. Interchange of Opinions and Ideas Between Learners.....	8.8	8.2	7.3	5.5	4.4
		3. Instructor Sells New Ideas and Practices (Implication).....	6.8	6.8	7.2	5.8	8.2
		4. Leading Questions.....	7.4	7.4	7.4	5.3	4.6
		(Rank of Particular Method)	7.7	7.1	7.0	5.6	4.5
	F. Recitation	1. Learner Answers Questions.....	4.0	4.9	6.0	6.3	6.2
		2. Oral reports by Learners.....	3.2	4.6	6.0	5.9	5.5
		3. Written Quizzes.....	3.0	2.4	5.8	6.6	6.8
		(Rank of Particular Method)	4.2	4.4	5.1	5.6	5.4
II. Showing (Any use of the eye for teaching, other than with printed material.)	A. Demonstration	1. Instructor Does Job Before instructional Group.....	7.1	7.7	8.1	7.9	7.4
		2. Instructor Does Job Before Individual.....	7.7	7.4	8.6	8.2	7.5
		3. Learners Watch Other Learners Do Job.....	6.7	5.0	7.2	6.4	5.5
		4. Instructor Performs Experiment.....	6.1	6.5	7.2	6.8	5.6
		5. Expert Does Job Before the Instructional Group.....	8.0	8.0	7.9	7.0	6.1
		(Rank of Particular Method)	7.3	7.3	7.5	7.0	6.4
	B. Field Work	1. Learners Watch Field Operations.....	8.2	7.8	7.7	6.4	6.6
		2. Institutional Group Makes Farm Tour.....	7.5	7.4	7.7	6.6	5.4
		3. Learners Do Jobs in Groups to Develop Skill.....	6.2	6.9	7.7	7.2	6.3
		(Rank of Particular Method)	7.4	7.3	7.1	6.5	5.8
	C. Illustration	1. Still Pictures.....	6.4	6.5	6.8	6.1	5.8
		2. Slides and Still Films.....	6.9	6.9	7.1	6.4	5.6
		3. Blue Prints.....	4.8	6.1	6.1	4.2	3.0
		4. Blackboard Sketches.....	6.1	6.5	6.8	5.6	4.9
		5. Moving Pictures.....	7.7	7.9	8.0	7.2	6.7
		6. Prepared Charts.....	7.1	6.9	7.0	5.4	4.4
		(Rank of Particular Method)	6.3	6.5	6.5	5.7	4.7

FUNDAMENTAL METHOD	PARTICULAR METHOD	DEVICES	Groups With Whom the Device Can Be Used Most Effectively				
			Rated With Relative Value (1-10)				
			Adult Farmers	Farm Young Men	Adv'd Farm Boys in School	1st Yr. Farm Boys in School	Town Boys in School
III. Doing (Performance in some way by learners.)	A. Classroom Performance	1. Learners Actually Do "Cross-Sectioned" Jobs.....	5.3	5.8	7.1	5.7	5.0
		2. All Learners Do "Type" Jobs.....	5.4	5.9	7.1	6.1	5.6
		3. Learners Make Decisions in Managerial Jobs.....	6.8	6.6	6.9	5.6	4.5
		4. Learners Plan and / or Carry Out Operative Jobs.....	7.3	7.3	7.4	6.6	5.7
		5. Learners Secure Information.....	5.3	6.4	6.9	6.4	5.2
		6. Learners Take Part in the Discussion.....	8.5	8.2	8.1	6.1	5.2
		7. Learners Plan Definitely to Use Information Secured.....	8.1	8.1	7.8	5.9	4.5
		(Rank of Particular Method)	7.5	7.7	7.6	6.6	5.8
	B. Farm Mechanics Performance	1. Learners Plan Work.....	7.0	7.2	7.4	6.7	5.5
		2. Learners Perform Production Jobs.....	7.7	7.6	7.6	8.1	6.5
		3. Learners Make Repairs.....	8.3	8.2	7.8	7.3	6.1
		4. Learners Report on Jobs.....	5.9	6.3	7.1	6.1	5.0
		5. Job or Operation Sheets.....	5.2	5.9	7.1	6.6	5.0
		6. Learners Make Sketches.....	5.3	5.9	6.9	6.2	5.4
		7. Learners Make Material Bill.....	6.3	6.7	7.6	6.5	5.8
		8. Learners Use Blue Prints.....	6.2	6.7	7.2	5.7	4.2
		(Rank of Particular Method)	6.3	6.9	7.2	6.9	5.2
	C. Supervised Farming Performance	1. Learners Set Up Long-time Program.....	6.6	7.2	7.5	5.8	4.5
		2. Learners Plan Immediate Operations.....	6.8	7.3	7.3	6.5	5.3
		3. Learners Carry Out Plans.....	7.0	7.3	7.4	6.4	5.1
		4. Learners Perform Operative Jobs.....	7.2	7.7	7.9	7.1	5.9
		5. Learners Apply Managerial Decisions.....	7.4	7.6	7.7	6.3	5.1
		6. Learners Set Up Enterprise Objectives.....	6.5	6.9	7.5	5.9	4.8
		7. Learners Report Accomplishment of Objectives.....	6.0	6.2	7.1	6.2	4.9
		8. Learners Analyze Records and Accounts.....	6.9	7.0	7.6	6.1	4.6
	D. Performance Supplementary Farm Jobs	1. Learners Set Up and Carry Out Improved Practices.....	6.9	7.4	7.8	6.3	5.1
		(Rank of Particular Method)	7.2	7.6	7.6	6.8	5.4
		1. Learners Plan Job.....	6.4	6.9	7.8	6.5	5.0
		2. Learners Carry Out Job Plans.....	6.3	6.8	7.5	6.1	4.6
		3. Learners Show Others How to Do the Job.....	6.7	3.3	7.7	5.8	4.0
		4. Learners Set Up Improved Practices.....	6.7	7.3	7.8	6.3	4.7
		5. Learners Carry Out Improved Practices.....	7.1	7.4	8.0	6.1	4.9
		6. Learners Do Jobs to Learn How.....	7.1	7.3	7.7	6.9	5.7
	E. Organization Performance (Include F.F.A.)	7. Instructor Teaches on Job.....	5.8	6.5	7.4	6.9	6.2
		(Rank of Particular Method)	6.9	7.6	7.9	7.0	6.0
		1. Learners Active in Organization.....	6.4	7.1	7.7	6.3	6.2
		2. Learners Hold Office.....	6.3	7.2	7.8	6.9	6.0
		3. Learners Engaged in Contests.....	5.4	6.8	8.5	7.4	6.5
		4. Learners Attend Leadership Training Courses.....	5.6	6.7	7.6	5.8	5.1
		5. Co-operate With Others.....	6.6	7.2	7.9	6.5	6.0
		(Rank of Particular Method)	6.7	6.9	7.5	6.9	6.2
	F. Exercise	1. Job or Operation Sheets.....	4.9	5.9	7.1	6.1	5.6
		2. Blue Prints or Samples.....	5.4	5.8	6.5	5.3	4.6
		3. Practice Records.....	4.1	4.9	7.0	6.8	5.6
		4. Practice Meetings.....	3.6	4.8	6.9	6.4	5.3
		5. Small Scale or Pseudo Jobs.....	2.7	3.3	3.4	3.8	4.2
		(Rank of Particular Method)	3.7	4.6	5.9	5.2	4.5
	G. Experiment	1. Learner Performs Experiment.....	5.6	6.5	6.5	7.5	5.7
		2. Teacher Performs Experiment.....	5.6	5.6	6.6	6.5	5.9
		3. Practice or Pseudo Jobs.....	3.1	3.8	4.4	4.3	4.4
		4. Experimental Plots or Feed Lots.....	6.6	7.1	7.4	5.7	4.4
		(Rank of Particular Method)	4.6	5.2	5.9	5.5	5.9
	H. Improvement Practices (Include "Project" outcomes and contests.)	1. Learners Set Up Improved Practices.....	6.7	7.1	7.9	6.7	5.2
		2. Tour to Show Outcomes of Improved Practices.....	6.9	7.2	8.0	6.9	5.3
		3. Contests to Show Skill.....	5.3	6.2	8.2	7.7	6.8
		4. Standards or Goals Set Up.....	4.9	5.6	6.9	6.1	4.9
		5. Graph or Tabulate Results of Improved Practices.....	6.0	6.2	6.5	5.5	4.4
		6. Plan Additional Practices.....	5.4	6.2	6.6	5.3	4.0
		(Rank of Particular Method)	6.2	6.4	7.1	6.5	5.1
IV. Checking (Any inspecting, checking, measuring and grading of the work by instructor.)	A. Check Learner's Performance	1. Check Long-time Programs.....	5.5	6.4	7.5	6.4	5.0
		2. Follow-up Improved Practice.....	6.1	6.9	7.9	6.6	5.3
		3. Content Showings.....	4.5	6.2	7.7	6.8	6.1
		4. Financial Success.....	7.5	7.7	7.8	6.8	5.7
		5. Educational Accomplishments.....	6.1	6.4	7.7	6.5	5.7
		6. Expansion Accomplishments.....	6.7	7.3	7.7	6.1	4.7
		7. Compare With Community Standards.....	6.7	7.4	7.9	6.5	4.9
		8. Check Plans for Future.....	6.1	6.9	7.5	6.1	4.9
		9. Awards Points and/or Grades.....	2.6	4.0	6.9	7.1	6.8
		(Rank of Particular Method)	6.1	7.2	8.1	7.2	6.6

This experience made it evident that methods for varying instructional groups, for varying teachers and varying jobs required some careful study before any sensible recommendations could be made.

Action on such a study was somewhat accidental. M. R. Bass, Director of Adult Education at Dunwoody Institute, in studying methods for CCC educational courses, exchanged for the "Wyoming Vocational Agriculture Plan Book" a study which he had labeled "Diagrammatic Methods in Adult Education." This had been the result of his experience at Dunwoody and was set up on the Trades and Industry background, and he assumed that all learning is encompassed by four basic methods, namely: (1) Telling, (2) Showing, (3) Doing, and (4) Testing. Each of these basic methods was subdivided into particular methods and each particular method into devices. Mr. Bass had made some study of the relative value of devices with different types of instructional groups. The idea seemed so excellent that his thinking was borrowed, with his consent, for use in checking on agricultural classes. The transference from the trades and industry setup to vocational agriculture had no effect on basic methods but did somewhat alter particular methods and devices.

The analysis of methods and devices was rather carefully done and the result criticized by Dr. F. W. Lathrop, Research Specialist in Agricultural Education. He recommended an extension of the proposed study of opinion on method to include not only Wyoming vocational agriculture teachers, but also a sampling of state supervisors, teacher trainers, and class members for each instructional group type set up. This complete analysis will be noted in the tables showing the average of teacher opinion in the completed study.

Since the immediate necessity for such a study was limited to the determination of method to use in evening classes and the implication of teachers in this determination, the supervisory, teacher-training, and class member opinion has not been sought. Much of interest might follow this extension, and, while the extension was planned originally, the transfer from Wyoming to Idaho on the part of the author eliminated such an extension as a possibility at the present time.

The procedure followed in securing the teacher opinion was simply that of mimeographing the forms and very carefully explaining to the teachers the reason for the study, what it would show, the meaning of terms used, the limits to each instructional group, and how to make the ratings. This explaining was done while visiting the department, and the teacher filled in the forms at that time so that any questions could be answered as they arose. He rated, on the basis of 10, how effective he thought each particular device and method was or would be with each of the five instructional groups, which were (1) Adult farmers (evening class), (2) Out-of-school farm youth (part-time class), (3) Advanced farm boys in school, (4) Beginning farm boys in school, and (5) Town boys. If a device was 70 percent effective with adults, it might be 50 percent effective with part-time boys, 40 percent with advanced farm boys in

(Continued on page 218)

# Future Farmers of America



## Our Cover

**T**OWNSHEND Agricultural Education Society is an organization of students in the College of Agriculture at Ohio State University who are interested in teaching vocational agriculture, and also those who may be interested in attaining certain personal abilities such as debating, extemporaneous speaking, and parliamentary procedure, which the programs of the society aim to develop.

The membership this year approximates 110 students, and the average attendance at meetings has been approximately 75.

An intimate working relationship with the agricultural departments and the F. F. A. organization in the state is maintained thruout the year. Two major projects of the school year are the planning and the direction of the leadership conference extending over two days during Farmers' Week in February, and managing the lunch stand during the two days of the annual state judging contests for students of vocational agriculture. About \$200 is cleared from the latter event.

The society is the largest organization of men students in the College of Agriculture. It is sponsored by the Department of Agricultural Education. In the picture on the cover page of this issue the president, Donald J. Foos, stands at the left in the front row. Bobby Jones, former national president of the F. F. A. and a senior in agricultural education, stands second to Foos's left.—W. F. Stewart, Adviser.

## 6,000-Mile Western Tour

IVAN JETT, Adviser,  
Stamping Ground, Kentucky

**W**HEN the Stamping Ground F. F. A. prepared their program of work and stated that they planned on making a 6,000-mile western tour, people began asking how they would raise the funds for such a trip. Two- and three-thousand mile tours were common, but a 6,000-mile tour was new. When they replied to these many inquiries that the trip could be made for an average of \$35.00 per boy for transportation, food, lodging, etc., there was



Ivan Jett

L. R. HUMPHERYS

many an agriculture boy and teacher who did not hesitate to express his doubt to the feasibility of the trip.

This group of 39 boys planned for this great adventure for over a year. They had carried on their farm practice program and had saved their money. In May they started selling local newspapers and magazines for the Curtis Publishing Company.

They mapped out their program and allotted their time for traveling and stops. Letters were sent by dozens to Chambers of Commerce, National Parks, and individuals so as to obtain information on prices, roads, and places of interest.

On the morning of June 21, eighteen of these boys met at six o'clock at the Stamping Ground High School building prepared for some of the most interesting weeks of their lives. Most of them were accompanied by anxious parents who wanted them to go but still had the parental fear that some injury might come to their loved ones. By eight o'clock they had packed their three large tents, suitcases, cooking equipment, and food on top of the bus and were ready to go.

The first stop was at the beautiful and inspiring Capitol of Kentucky, Frankfort; but they hastened on, anxious to see more distant lands. At



Camping at Dallas, Texas

Hodgensville, about 100 miles distant, was the great Lincoln Memorial erected by the Federal Government and containing the small log cabin in which Abraham Lincoln was born. On again and within an hour they were walking down the great shaded path which is known to Kentuckians as "My Old Kentucky Home." In this old southern mansion Stephen Foster was a visitor when he wrote that immortal song, "My Old Kentucky Home."

In the afternoon the bus rolled into the Mammoth Cave National Park, where the boys ate a quick lunch and then went thru one of the seven wonders of the world, Mammoth Cave.

About six o'clock that evening they were tired, hungry, and wanted to camp; but it was raining hard and they decided to drive on. It was eleven o'clock that night before the youngsters crossed into Tennessee where they could pitch their tents for the night. Very few slept well as they missed mother, dad, and their soft beds at home; but the next morning all of this was forgotten.

That day they visited a Cotton Com-



press and Warehouse Company where they watched cotton being baled and stored for future deliveries. Late that evening they crossed the big river—Mississippi.

The third day they saw for the first time in their lives cypress swamps, visited Hot Springs National Park and that night were the guests at the State Arkansas F. F. A. Camp just outside Hot Springs National Park. They had a wonderful time at this camp, swimming, boating, and playing games; and that night at the campfire will be one that will never be forgotten by any boy that made the trip.

In a few days they arrived at Dallas, Texas, where they spent a few days visiting the city and the Pan-American Exposition. After leaving Sweetwater, Texas, they realized the size of that great state and began finding out the value of water. One night they unknowingly camped in a tarantula nest and the next morning killed fourteen of these huge spiders. Another unforgettable memory of the state of Texas was



A Morning's Catch

loading up their bus at one o'clock in the morning in a heavy downpour of rain. They had failed to put up their tents the night before.

They crossed the line into New Mexico and visited the most beautiful and wonderful of all caverns, the Carlsbad Caverns. The next three days were spent at El Paso and in old Mexico buying souvenirs, visiting old missions, and finding out how fortunate they were to be citizens of the United States. Another day was spent in going thru the great irrigated valley, Isleta Valley, where they saw irrigation being practiced for the first time.

The next few days were spent in visiting the Painted Desert, the Petrified Forest, and going thru the desert country. Just before they arrived at the Grand Canyon National Park they had their first experience in shortage of water. They carried ten gallons of water in a water cooler and five gallons for the bus, but these expanses of waste land between the Great Mountains made it a pre-



mium. It was hot and dry. Houses were extremely few in number. For two days they did not wash their faces and hands, and on the afternoon of the second day they had to stop drinking water in order to keep the bus going. All water was gone and it was necessary to stop the bus so as not to boil away the precious fluid in the cooling system. The boys were irritable and thirsty but a call of "a house ahead" received their immediate attention. They stopped and after walking over to the house found it deserted, windows broken, and sand drifting in. The desert was claiming it. It seemed more like a story book. It couldn't happen to them. The boys noticed a well in the back, but found it as dry as the sands above. A glance around showed the remains of three cattle lying in the sand with bones bleaching and hides drawn tight. They were a solemn group as they walked back to the bus.

After seemingly endless hours they arrived at a ranch. Here they obtained a full supply of water again and drank enough to ease their hot, thick, dry lips. If you have never eaten sardines and salmon and have never had the opportunity to wash your hands and face, take it for granted now that you will never want to begin. This group took it for those days good naturedly, but everything they ate tasted like sardines and salmon.

On the same day, July 4, they arrived at Grand Canyon National Park; but there was many a boy that cried himself to sleep that night. It was a thrill for these small lads to wander thru the Kaibab National Forest and to stand at the edge of the magnificent Grand Canyon and look into the distance. They stood at the brink of this great



At Continental Divide

hole in the ground and watched the lightning flashing below them, and could see the rain hitting these weathered sides and going down into the depths.

Then again bad luck overtook them when their adviser stepped out of the bus, sprained his ankle and strained a ligament. For the next ten days the larger boys took turns carrying him around so he might not miss any of the new sights.

After a few days of rest, they drove to Zion National Park where they learned the size of the mountains and the steepness of their slopes. They could not help exclaim and wonder as they passed thru the mile and one-fourth tunnel constructed of solid rock. The evening was spent following the trails, and that night around the campfire they listened to the rangers tell tales of past happenings when the great country was inhabited by Indians.

The next morning they were up early and soon arrived at one of the most beautiful of God's creations—Bryce Canyon—whose multi-colored sides were made more beautiful in a setting sun so that the many peaks threw shadows into

the valleys. Salt Lake City called and they spent a day visiting the great Mormon Temple and Administration Building. Tho loyal to Kentucky, there was many a boy that complimented this great city on its cleanness, beauty, and morality laws. One night was spent on the Great Salt Lake where they had their first experience with the great western winds and storms. Two anxious hours were spent in trying to get stakes to hold in the soil, but they found that it was necessary to bury logs and stake the tent to them.

These high school boys had heard many times that it was impossible to sink in this water and they rushed to don bathing suits to make this test. It proved to be true, and cries of surprise and delight mingled with those of pain because of the extreme saltiness. Many of them saw their first sea gulls, and several loaves of bread disappeared as food for these graceful creatures. Supper that night was a failure, as they spent most of the time killing mosquitoes or trying to get away from them. They soon found that one layer of cloth was just like inviting the mosquitoes to dinner.

More bad luck came to these boys. Most of them had three blankets but as they traveled farther north the temperature dropped; and instead of 18 cots being set up at night, there were usually only eight or ten, as they started sleeping together and sleeping on the ground to keep warm.

They entered Yellowstone National Park thru the west entrance where they saw half-wild bears and hundreds of deer, along with an occasional moose, elk, or mountain sheep. Four days were spent in this wonderland seeing wonders that could hardly be believed, such as geysers, canyons, and a rugged beauty which was worth the trip just to see one National Park alone. Many of the boys went fishing and for two meals had all the trout they could eat.

They were getting homesick, as they had been away from home for four weeks and some of them had never spent more than a night away from home. They started south, visiting historic cities made famous in western magazines, such as Cody and Laramie. They visited the Rocky Mountain National Park and at 12,000 feet above sea level had a snowball fight in July. While in this park their progress was slow and they arrived in Denver at one o'clock in the morning; but at 7 a. m. they were on their way again crossing the great plains of Kansas, passing by the ever increasing wheat and corn fields into the cattle market of the world, Kansas City. Only a short time was spent here as home was calling to them and they went on thru St. Louis into the corn belt of the world. In a few days they were back in Kentucky—tired, dirty, and happy; nevertheless, they held in their hearts and in their minds five weeks of unforgettable pleasures and experiences.

As to their meals, a little more information might be interesting. As far as El Paso everyone ate in restaurants and from there on they prepared all their meals. They nicknamed their cooks "Salty," "Greasy," and "Sloppy." Salty got his name because he wanted to put salt in the coffee. The other two names need no explanation.

Breakfast consisted of cereals, corn, bacon, coffee, eggs, and cocoa. Lunch,

which was usually light unless they were camping, consisted of sardines, salmon, peanut butter, pickles, cheese, potato chips, cookies, fruit, and preserves. Dinner was made up of vegetable soup or pea soup, cooked tomatoes or tomato juice, fruit, meat, peas, corn, spaghetti, and hominy. Needless to say, every boy gained weight while on this trip.

A school bus was rented from the owner at seven cents per mile. Tents and all cooking equipment were borrowed.

## A Future Farmer Alumni Chapter

WINSTON C. STRONG, Teacher,  
Fresno, California

A FUTURE Farmer alumnus is one step removed from his goal. He is a boy who has come thru several years of high school agricultural training during which time he has learned the agricultural enterprises that are grown or adaptable to his community; he has read and discussed basic practices and theories in these enterprises, taking into account the state and national viewpoints in order to understand his own local conditions. In addition he has followed thru one or more of these enterprises in a practical way with his project program.

At the end of his four years in High School this boy is confronted with a perplexing dilemma. He wants to become a successful scientific farmer, and a leader in his community; however, his high school program usually leaves him far short of his goal with many problems and obstacles to overcome before he has a chance of attaining even the more immediate objective of getting started to farm.

The high school vocational agriculture teacher and chapter adviser has a moral, if not a legal, responsibility to his boys—to help bridge the gap between the project-chapter period and the farming-farm organization period. Probably the best immediate solution of these problems is for the teacher to organize an alumni group to continue in some manner the type of agricultural work and social contacts the boy has started in high school.

The convolutions of one such group composed of boys one or two years removed from high school and engaged in, or wanting to be engaged in, farming bring out some important needs to be met if groups of this nature are to attain the goal hoped for them—that is, to become modern successful farmers following the best practices and thus improving agriculture in their community.

These problems can be classified under four headings.

The first problem to be met by any group is *organization*. Someone has to push it and get the group together. The local agriculture instructor with two or three interested alumni can call the first meeting, and from here on the continuation of the group is merely a matter of mechanics, for most boys are heartily in favor of joining such a group if they are properly approached. It is up to the boys to decide on membership, constitution, by-laws, and policies,

The Central Union group at first over-emphasized social activities—dances, skating and swimming parties, box socials, interclub sports, softball league, etc.—in fact, for a time it became "Social Club Number 203." However, by the time the group reached the point of formulating a constitution and working on courses they were to follow in order to reach their goals, the proper serious note was sounded and the group then became a working unit, a vehicle for the boy to use in achieving his objective.

From this point the group has progressed very rapidly. Holding its meetings twice a month has made it possible to devote considerable thought to the best procedures in educational and co-operative, as well as social lines. A shop program is being organized, and a lecture-discussion period is a part of every meeting. One of the aims of the present organization is to have experts come in regularly to the meetings and lead discussions on various live farm problems.

A second aim is the formation of a purchasing and marketing unit. An outline for setting up a feed co-operative has been worked out in which feed will be bought at harvest time and ground, mixed, and distributed during the year. Each member is working on marketing data to be saved and organized by the club so that individual members can have the advantage of group experience. A third aim of the organization is to tie in with the regular Future Farmer organization on the one hand, and on the other, the Farm Bureau and the Grange. The alumni group is a transition period from one to the other.

The second problem is *adequate supervision*. Those boys that are continuing their projects lack proper guidance and miss the timely advice they received on their projects while in school. All of the Central Union alumni feel a lack of knowledge necessary to start successful farming. All need practical experience other than the type of training they get under their fathers or working for just anyone, for in this type of haphazard training it may take these boys years to learn as much as they could in several months on an experimental farm under the guidance of experts, or on a well supervised, enlarged project of their own. Not only that, but they would be learning the things necessary for carrying on the type of farming they were interested in, and adapted for, and would learn new approved practices instead of following the same old rut that someone else had carved out. They can accomplish much more now than when in high school. They have one purpose and are more mature. They constitute a real tool with which to improve agriculture, and so far we have failed to use this tool to its best advantage, or use it fully.

A program should be devised either to train a special group of men to concentrate their efforts on these alumni, or to give the instructors now on the job more time to devote to such out-of-school boys. In either case, special method courses should be included in the required training of vocational agriculture teachers. These should offer the kind of information necessary to enable the instructor to meet the needs of these older, more advanced boys.

*Financial aid* is the third problem. Farming necessitates a large capital investment, this being one of the big

problems a person has to meet when buying a farm. Most boys with adequate supervision could make good farmers if they had the necessary capital. Even if these boys had only a little financial help it would enable them to enlarge and improve their projects and in the course of a few years they could be renting and owning farms. There are a number of agencies that are offering young men material assistance in some types of farming. Boys who wish to go into cotton-farming need very little capital, and boys are being encouraged and aided in dairying. In time other aids will be offered by commercial firms trying to encourage certain branches of farming. Then, of course, the boy can obtain loans thru local banks, the federal government, and other loaning agencies. The rehabilitation program will probably help a number of these boys to obtain farms or aid. The Central Union alumni feel that an additional reserve built up within the chapter for loaning purposes is necessary for those of its members that are unable to get loans from other sources. A reserve is being built up thru chapter activities and group projects.

The fourth and last problem is *placement*. Industry and industrial vocational education have worked out this problem by apprenticeship. The young man after his high school industrial training is apprenticed on the job he has been training for, under an expert practical worker who has been trained to couple theory and practice. After apprenticeship this young man is placed on the job and becomes a useful member to his community. Agriculture may not present analogous conditions to industry, as the financial situation is entirely different, and the agriculture man has to have a more varied training; however, it seems that for boys interested in positions such as manager, herdsman, skilled agricultural specialist, etc., that experimental farms or apprenticeship under master farmers would meet a definite need. Positions should be waiting for men that come thru their training successfully. The training of these men should be in view to the positions to be filled. Similar training derived by a boy planning to become a farmer would also be invaluable, and this training should prove more effective than partial supervision. Here is much food for future thought.

## Effective Project Supervision

(Continued from page 200)

learning does not begin and end with the memorization of information but that information is to be used in solving problems and in guiding the thinking of pupils forward to the place where they can work out plans, and knowingly and purposefully carry out practices which will have a direct bearing upon the successful outcomes of their projects. No instructor is prepared to supervise his pupils in project work nor to do a good job of classroom instruction until he has discovered what seems to be the most desirable practices for the different project enterprises and for the different types of home farm conditions.

If it is true that we learn *what* we practice, then what we practice should

be the best that our study, thinking, and experience can discover. It follows that a determination by both instructor and pupil of up-to-date and proved practices is a requirement for effective project supervision and successful project program.

## Comparison of Methods

(Continued from page 215)

school, 30 percent with beginning farm boys in school and 10 percent effective with town boys. Then the rating would be 7-5-4-3-1 on the study forms.

Mr. Sam Hitchcock, State Supervisor for Agricultural Education in Wyoming, had each teacher fill out study forms due to the fact that the author severed his official connection with the State of Wyoming before this had been done. He did average the results after getting settled in Idaho. The present supervisor is making a follow-up of this study.

The consensus of opinion of Wyoming teachers appears in the tabulation.

Some conclusions which manifest themselves are:

1. Adults are likely to get more good from bulletins than younger men and boys.

2. In general, advanced farm boys in school are likely to respond better to all other reference material grading down to adults and town boys.

3. Adults are more likely to absorb a lecture than younger farm men and boys because of their greater experience.

4. Advanced farm boys in school understand blackboard analysis better than other groups grading down to adults, farm young men, beginning farm boys in school, and town boys.

5. Other discussion ranges from adults down to town boys.

6. Panel discussions are of less value than other conference procedures.

7. The conference procedure is best for adults, becoming less valuable as the experience of class members lessens.

8. Formal recitations do not fit the vocational agriculture program well.

9. Demonstrations and field work do best with adults ranging down on the basis of past experience of the learners.

10. Advance farm boys grasp illustrations best, ranging down thru the part-time to adults and dropping to beginning boys and town boys.

11. Performance or doing, favors the advanced farm boys in school thruout with beginning farm boys in school next, part-time boys next, followed by adults and town boys. The relationship which seems to exist between school and performance is a very hopeful sign.

12. Checking favors the in-school and part-time groups over the adult group, probably because it is easier.

Comparative studies might change some of these conclusions but the study did serve its purpose in proving that the teachers of Wyoming are agreed that some type of conference procedure works best with evening class members and is of less value as the experience of the group becomes less and less. A careful study of the tabulated averages shows many interesting facts which may be of use in instruction, and the range of answers was such as to prove that opinions differ greatly, but all attach value to standard methods as allowing opportunity for maximum efficiency.

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t—R. M. Stewart, Ithaca  
t—E. R. Hoskins, Ithaca  
t—W. A. Smith, Ithaca  
t—Roy A. Olney, Ithaca

**NORTH CAROLINA**  
s—Roy H. Thomas, Raleigh  
t—L. E. Cook, Raleigh  
t—L. O. Armstrong, Raleigh  
t—J. K. Coggin, Raleigh  
t—S. B. Simmons, Greensboro (c)

**NORTH DAKOTA**  
s—t—E. H. Jones, Fargo  
s—E. L. DeAlton, Fargo

**OHIO**  
s—R. A. Howard, Columbus  
s—C. S. Hutchinson, Columbus  
s—E. O. Bolender, Columbus  
s—W. G. Weiler, Columbus  
t—W. F. Stewart, Columbus  
t—H. G. Kenestrick, Columbus  
t—J. B. McClelland, Columbus

**OKLAHOMA**  
s—J. B. Perky, Stillwater  
s—Bonnie Nicholson, Stillwater  
t—D. C. McIntosh, Stillwater  
t—Don M. Orr, Stillwater  
t—D. C. Jones, Langston (c)

**OREGON**  
s—E. R. Cooley, Salem  
t—H. H. Gibson, Corvallis

**PENNSYLVANIA**  
s—H. C. Fetterolf, Harrisburg  
s—V. A. Martin, Harrisburg  
t—H. S. Brunner, State College  
t—W. A. Broyles, State College  
t—C. S. Anderson, State College  
t—W. F. Hall, State College

**PUERTO RICO**  
s—Antonio Texidor, San Juan  
t—Nicholas Mendes, Mayaguez

**RHODE ISLAND**  
s—t—G. H. Baldwin, Providence

**SOUTH CAROLINA**  
s—Verd Peterson, Columbia  
s—J. L. Sutherland, Columbia  
t—W. G. Crandall, Clemson College  
t—J. B. Monroe, Clemson College  
t—B. H. Strubling, Clemson College  
t—T. A. White, Clemson College  
t—W. C. Bowen, Clemson College  
t—J. P. Burgess, Orangeburg (c)

**SOUTH DAKOTA**  
s—H. E. Urton, Pierre  
t—R. R. Bentley, Brookings

**TENNESSEE**  
s—G. E. Freeman, Nashville  
t—N. E. Fitzgerald, Knoxville  
t—J. B. Kirkland, Knoxville  
t—W. S. Davis, Nashville (c)

**TEXAS**  
s—R. A. Manire, Austin  
s—J. B. Rutland, Austin  
t—E. R. Alexander, College Station  
t—Henry Ross, College Station  
t—Malcolm Orchard, College Station  
t—S. C. Wilson, Huntsville  
t—T. A. White, Kingsville  
t—Ray Chappelle, Lubbock  
t—C. H. Banks, Prairie View (c)

**UTAH**  
s—Mark Nichols, Salt Lake City  
t—L. R. Humpherys, Logan

**VERMONT**  
s—t—Kenneth Sheldon, Burlington  
s—t—Howard Martin, Burlington  
s—t—C. E. Wright, Burlington

**VIRGINIA**  
s—W. S. Newman, Richmond  
t—E. C. Magill, Blacksburg  
t—H. C. Groseclose, Blacksburg  
t—H. W. Sanders, Blacksburg  
t—C. E. Richard, Blacksburg  
t—G. W. Owens, Ettricks (c)  
t—J. R. Thomas, Ettricks (c)

**WASHINGTON**  
s—J. A. Guitteau, Olympia  
t—Everett Webb, Pullman

**WEST VIRGINIA**  
s—John M. Lowe, Charleston  
s—H. N. Hansucker, Charleston  
t—D. W. Parsons, Morgantown

**WISCONSIN**  
s—L. M. Saaman, Madison  
t—J. A. James, Madison  
t—V. E. Kivlin, Madison

**WYOMING**  
s—Sam Hitchcock, Cheyenne  
t—S. H. Dadianman, Laramie





